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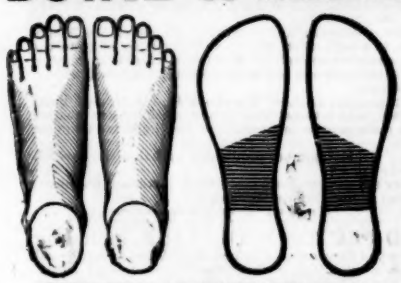

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A Lecture

ON THE

CAUSES OF THE FAILURE OF WOMEN TO NURSE THEIR INFANTS AT THE BREAST.

Delivered at Guy's Hospital

By HECTOR CHARLES CAMERON,
M.D. CANTAB., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN AND PHYSICIAN IN CHARGE OF THE DEPARTMENT FOR DISEASES OF CHILDREN, GUY'S HOSPITAL.

GENTLEMEN,—I do not think I need occupy much time in describing the main advantages enjoyed by an infant fed at its mother's breast. Briefly I think these advantages may be classed under three heads.

1. In the first place the severer forms of alimentary disturbances are infinitely more common among bottle-fed than among breast-fed infants. Dyspepsia with the passage of acid, watery, green stools, and the vomiting of the sour, fermented contents of the stomach may occur in both, but while the attack in the breast fed often shows itself only in a little fretfulness and a temporary loss of appetite, in the artificially fed recovery may only be attained after a long illness marked by alarming symptoms of prostration or intoxication and by a rapid and severe loss of weight.

2. In the second place, although the liability to contract infectious disorders such as common colds, influenza, bronchitis, tonsillitis, &c., is no greater in the artificially fed than in the infant at the breast, yet when such an illness has been contracted the prostration of the child, as well as the effect upon growth and development, is much more marked.

3. Thirdly, the artificially reared child is apt to show signs of the unnatural character of his diet. The weight is sometimes unsatisfactory. The skin is usually of an unhealthy pallor, while points of pressure easily produce a blotchy erythema which does not fade for a long time. The feet and hands are often cold and cyanosed, while transitory urticarial and erythematous blotches are apt to appear scattered over the body. The movements of the bottle-fed infant are less vigorous and powerful, and in acquiring the various functions, such as grasping, sitting, standing, walking, &c., he lags behind the breast-fed child. In a sitting position the back is apt to sink into a well-marked kyphotic curve—the so-called cat's back. The recti abdominales are often separated, and inguinal or umbilical hernia is common.

THE FACTORS CONTROLLING THE SECRETION OF MILK.

If, then, the superior development and the diminished liability to disease of infants fed at the breast are so considerable, we may ask ourselves why the practice of bottle feeding is so common. I do not propose to exhaust myself in denouncing those women who refuse to suckle their children—I would rather speak of those who are genuinely anxious to do their best for their infants, and who profess themselves willing but unable to nurse them. From these women you will hear again and again the complaint that they have not sufficient milk or that their milk left them, and this want of milk is commonly regarded as the result of some weakness, or at any rate of some want of robustness in their own health. In considering whether such a generally accepted assumption is justified it will be well first to inquire what we know of the factors which control the secretion of milk.

In the first place, I want you utterly to disbelieve the statement that modern women, just because they are modern women, far removed from the primitive conditions of life, suffer from any degeneration of the mammary gland. There is no proof whatever that racial development is in the direction of atrophy of the gland or of degeneration of its functions. Secondly, we should remember that the force which brings the mammary gland to free secretion is provided by the vigorous sucking of the child. When the infant is born there is but little milk in the breast, while in a few days, after a strong healthy infant has begun to suck, milk flows in abundance. If two infants are nursed the amount of milk doubles itself; if one is taken away the amount is reduced by half. I know no way in which the secretion of milk can be stopped save by a complete removal of the child. Lastly, and most significantly of all, if for any reason only one breast is used, that breast alone secretes milk, while the other remains dry. These are commonplace observations, but they show that the main factors which determine the initial secretion of milk in the mother's breast reside in the child and not in the mother. When we come to examine the matter a little more closely, we shall find that neglect of these elementary considerations provides an explanation of the failure of many women to furnish a sufficient supply of milk for their offspring.

[A case which has occurred in my practice since the lecture was written may be quoted to show how utterly the breast secretion is dependent upon the suction of the child. In the same way I have put many children back to the breast after they had been taken from it, but none at so long an interval. An infant 7 months old was sent to me by Mr. C. H. Fagge, who had operated upon it for intussusception seven weeks previously. The operation had been successful but there had been considerable trouble with the diet. Until admission to hospital the child had been fed entirely upon the right breast. The mother had not used the left breast for any of the last three children, so that it had not been functional for eight years. The infant was put back to the breasts, each being used alternately at three-hourly intervals. During the first week there was a loss of two ounces, which was regained during the following week. Thereafter the child's gain in weight was entirely satisfactory and milk flowed in abundance from both breasts, one of which had not been used for seven weeks and the other for eight years. The mother had never used a breast pump at any time to preserve the milk-supply or to aid the child's suction. I do not infer from this single case that such a proceeding is possible usually, or under all circumstances. It illustrates my present contention admirably, and is in accord with similar observations by Heubner and others.]

In the first place, however, it may be asked why the infant should be born before the flow of milk is established, and why it should be left to the child to secure a sufficient supply by its own exertions. I think we may see in this a very complete and successful provision against the danger of overfeeding the child. When the child has a good appetite, sucks well, and empties the breast completely the amount of milk secreted increases with each nursing. There is here a wonderful adaptation of supply and demand. It is true to say that the child grows in strength and size because there is an increasing flow of milk; it is equally true to say that more milk is secreted because the child grows in strength and power of suction. But let some accident diminish his appetite for a few days—some slight pyrexial disorder, for example, or a trifling dyspepsia—then with diminished suction less milk is secreted, and the infant involuntarily imposes upon himself a period of partial starvation.

There is, however, a second provision against the danger of over-feeding and dyspepsia in breast-fed infants. The composition of the milk varies within wide limits during a single nursing. The first milk drawn off is relatively dilute; the last milk is so rich in fat that it may almost be considered as cream. With feeble suction and insufficient emptying of the breast this last concentrated milk is not obtained, and the food of the sick child becomes relatively dilute.

In these two ways Nature guards very efficiently against over-feeding, and as a result dyspepsia from simple overfeeding is a very much less common and less severe disorder in breast-fed infants than in those babies who are fed on the bottle, the contents of which are of unvarying composition and always ready to flow freely into the infant's mouth in response to a minimum of effort on his part.

In some cases, however, Nature seems to have been, as it were, over-careful—to have guarded so well against the over-feeding of the feeble or sick infant as to cause some risk of inanition and drying up of the mother's breast. This is especially so, I think, in first-born infants. No doubt the first labour is prone to be protracted and difficult, and the child as a result tends to be exhausted or even slightly asphyxiated, and is apt to lie in a drowsy condition, with little appetite and little vigour in sucking. But apart from this effect upon the child, which in all but a few severe cases is quite transitory, the breast which is becoming functional for the first time is more slow to secrete and requires a greater effort on the part of the child than does the breast of a multipara. At any rate, there appear to be

not a few cases in which the first baby suffers severely from inanition while the later children thrive from the beginning. On the other hand, when the nursing of the first child has been very easy, I have sometimes thought that the second is more likely to suffer from dyspepsia as the result of overfeeding. Although no doubt women differ considerably in their response to the stimulus of the infants' sucking, it remains true that the main factor which controls the secretion of milk is provided by the sucking of the child. Overwork and under-feeding of the mother in the later months of lactation can doubtless produce deterioration of the quality of the milk, but in the first establishment of the milk the part of the mother, provided that the nipples are well formed, is comparatively a passive one, and the breasts of a woman in the last stages of exhaustion from some debilitating disease may be full of milk for some time after labour, provided only that the child is strong and hungry.

INANITION IN THE INFANT.

With the most healthy baby and with the most vigorous sucking there is always a period of inanition lasting on an average less than a week from the time of birth, a period, that is to say, in which the amount of milk secreted falls below the physiological needs of the child, and during which there is a fall of weight. With a feeble child, as, for example, after premature birth, this period of inanition is likely to last very much longer. Let me enumerate some of the commoner causes which diminish the appetite of the infant or prevent his proper suction and so prolong the period of inanition. 1. Premature birth. 2. Difficult and prolonged labour with exhaustion of the child, in the worst cases with asphyxia or atelectasis pulmonum. 3. Insufficient heating of the child, from the unnatural separation of mother and child which modern custom imposes. The child whose temperature has been allowed to fall far below normal is torpid and sluggish in its movements and sucks badly. 4. Acute pyrexial infections, many of them obscure and difficult to diagnose, such as bronchitis, broncho-pneumonia, tonsillitis, pyelitis, influenza, otitis media, umbilical sepsis, &c. 5. A primary dyspepsia from over-feeding, and especially from the early and unnecessary administration of additional artificial food, may give rise to inanition and drying up of the breast, because of the resulting loss of appetite and diminished suction. 6. Nasal obstruction—e.g., from adenoid growth or syphilis; cleft palate; ulcerative stomatitis; Bednar's aphthæ. 7. Hypertrophic pyloric stenosis. 8. Dyspnœa from severe congenital heart disease. 9. The mother's nipples may be depressed, cracked, or painful. The diagnosis of inanition should always be followed by a careful search for such causes as these.

When the mother's milk is insufficient in amount symptoms arise which it may be profitable to contrast with the symptoms of dyspepsia, as has been done in the following table:—

Inanition.	*Dyspepsia.*
1. The child is drowsy and is apt to sleep past his meal times. When awake he is sometimes placid and attentive, sometimes fretful and restless, especially when the breast is proffered.	1. Fretfulness, crying, and restlessness by night and day are constantly found.
2. The abdomen is soft and retracted. The child grows long and slender, losing all the natural folds and pads of fat of the healthy infant. Constipation may be marked. The motion is often dry and brittle and high-coloured.	2. The abdomen is blown out. Peristalsis is more active than normal and the audible passage of gas and flatus often accompanies an attack of colic. The fæces are forcibly expelled with an audible escape of gas, and the colicky pain sets the whole body into restless movement. Coils of intestine may be apparent through the skin in cases of long standing and great severity. Ulceration is common around the anus and upon all the surfaces which are brought into contact with the acid and irritating stools in the restless movements of the infant.
3. Vomiting is rare in uncomplicated inanition, but it is to be remembered that the tolerance for food falls in inanition, and the sudden substitution of an ample diet or the sudden institution of forced feeding by a nasal tube may precipitate an attack of dyspepsia.	3. Vomiting is very frequent.
4. The skin is dry, pale, and cool.	4. The skin is apt to show transient erythematous and urticarial blotches.
5. The temperature is subnormal and the pulse slow. I do not believe that the so-called "inanition fever" exists. Pyrexia in inanition is not due to the inanition itself, but is produced by some obscure infection which has destroyed the appetite and has therefore resulted in inanition.	5. The temperature is irregular—the steady temperature of the healthy infant giving place to considerable oscillations of the curve.
6. Syncopal attacks and attacks of cyanosis commonly precede death, which is usually sudden. A terminal infection such as bronchitis or broncho-pneumonia is common.	6. Death is often the result of complications such as bronchitis or broncho-pneumonia or the severer symptoms of intoxication which form the picture of so-called "summer diarrhœa" supervene—partial coma, with fixed, unseeing gaze and half-open eyes, immobility of limbs and unnatural posture, irregular hyperpnœa, high pyrexia, albuminuria, alimentary glycosuria, &c.

When from the symptoms you suspect that the mother's complaint that the milk is insufficient in amount is correct, it is well to watch the conduct of the infant at the breast. If you observe a healthy infant sucking at a breast which is full of milk you will find that every now and then a little milk is apt to be spilt and appears upon the infant's cheeks and lips. In inanition the child is not so likely to spill any because the flow is not sufficiently free. Secondly, a child at a freely running breast will be noticed to make one or two sucking movements, and these will be followed quite regularly by a swallowing movement, and with a finger on the child's larynx it is easy to count the number of the swallowing movements and to compare them with the number of sucking movements. When the breast is comparatively dry the child will suck for a long time without swallowing, and as it pauses to rest before beginning its unprofitable labour again it will even finish with a sucking movement, and no final swallowing movement can be felt.

DISADVANTAGES OF MIXED FEEDING.

Before considering the proper management of inanition at the breast let us consider what is the usual treatment adopted in such cases. The mother almost always is anxious to give the baby some artificial food as well as the breast, and in this she is sometimes supported by doctors and nurses. Now such mixed feeding can be carried out very successfully in the later months of lactation when the secretion of milk is quite firmly established. Mixed feeding may even be successful in the early months of lactation, if we except just those cases which we are now considering—those in which the difficulty lies in the tardy appearance of a sufficient supply of milk. The amount of milk corresponds, as we have seen, with the amount of the child's appetite, and to diminish the feeble appetite by giving artificial food in addition is to ensure a still further decline in the amount of milk secreted by the mother. A torpid and satisfied infant will make no serious attempt to empty a breast which flows with such difficulty. Only hunger will urge him to vigorous effort. In the premature and unnecessary prescription of additional artificial feeding we have the explanation of a great number of cases of so-called inability to suckle. The child which is just holding its own and sucking a bare subsistence prefers the easily running bottle and refuses the difficult breast. Mothers and nurses are naturally apt to be impatient and easily alarmed, so that often before the child is a week or ten days old, because of the failure to gain in weight mixed feeding has been instituted, with the result that the baby refuses the breast, and the lapse of a few more days sees the child launched upon its precarious course of bottle-feeding. It cannot be too strongly emphasised that the artificial feeding of very young infants is a matter of the greatest difficulty, and that dyspepsia produced in the first few weeks of life has indirectly a high mortality. If breast feeding can be obtained for three months the child's digestion attains a certain degree of stability, and thereafter an extreme degree of intolerance for artificial food is rare.

MEASURES TO COMBAT INANITION.

If mixed feeding is seldom successful and aggravates the condition which it purports to relieve, what, then, is to be done? No doubt in a considerable number of cases, in spite of all our efforts, we shall be forced to give additional food. My point is, not that mixed feeding is never necessary and is always to be condemned,

but that while a certain period of inanition is physiological and always present, under certain circumstances it may be very much prolonged, and that premature and unnecessary interference during this period is a common cause of failure of lactation in women. Before advising the institution of artificial feeding we should use every means in our power to aid the establishment of the breast secretion, and we should only desist from our efforts when it becomes evident that the infant's vitality is becoming seriously depressed. In the great majority of cases inanition gives rise to a fall in weight which is extremely slow and gradual. There is no sudden downward swoop of the weight curve such as is common in severe dyspepsia and in conditions of food intoxication. As a rule, even in severe cases, if proper precautions are taken, weeks may elapse before the fall in weight is considerable and before any disquieting symptoms occur. Because many of the causes which impair the infant's power of suction are of a transitory nature, simply by the lapse of time improvement is likely to set in, and when once the corner is turned there is little likelihood of relapse. During some pyrexial disorder contracted soon after birth an infant may lose as much as a third of its weight without the appearance of any alarming symptoms. Thus during eight weeks of high fever due to pyelitis an infant weighing 8 lb. at birth declined in weight to 5 lb. 2 oz. It suffered severely from inanition, and the breasts of the mother were almost dry. By the exercise of extraordinary patience and persistence on the part of the mother suckling had not to be abandoned, and at the termination of the infective process the secretion re-established itself, and the weight of the child thereafter showed a uniform rise. Had this infant been weaned at the height of the disturbance, as was the constantly expressed desire of the nurse, I do not doubt that it would have succumbed to the resulting digestive difficulties. In the majority of cases of prolonged inanition at birth waiting is a less evil than weaning at so inopportune a moment. Meanwhile, as we wait, much may be done to combat the condition.

1. In the first place the infant must be kept very warm. Because of a surface area relatively very large heat is lost with very great rapidity by the newly born, especially by those in whom the fat is deficient. The infant at birth and until his demands for food are satisfied is to a great extent a cold-blooded animal, whose temperature follows passively the temperature of his environment. In all mammals Nature has provided a constant source of heat for the newly born in the close contact which exists between mother and young, and it may be not the least important of the functions of the human mother to impart the warmth of her own body to the child and to regulate its temperature by approximating it to her own. When the infant at birth is weakly and the supply of milk long delayed the need of this constant source of heat becomes all the greater. Among the well-to-do separation from the mother is the rule from the first. The advantages of this are obvious and the disadvantages are minimised or prevented by adopting means of warming the child artificially. Among the poorer classes, where the newly born are commonly kept in close contact with the mother, the ill-effects of inanition are apt to become obvious for the first time when the mother rises from bed. "When I got up my milk left me" is the commonest of all complaints, and the explanation lies in the activity and vigour of sucking which the infant will display so long as his temperature is kept raised by contact with the mother, and which is replaced by torpor and inaction when the heat of the body has been allowed to fall after the mother has left her bed. A nursing mother should be kept in bed, not only until the uterus has sufficiently involuted, but also until the milk secretion is so well established that the physiological needs of the child when separated from the mother are amply met. The complete separation of mother and child, although perhaps necessary and upon all accounts to be enjoined, is entirely unnatural, and if a weakly child is to take no harm the most careful adjustment of the temperature of its immediate environment is necessary. For vigorous children who early obtain sufficient food from the breast no refinements are needed. For feeble children the use of a single large hot bottle is apt to defeat its own object. When the bottle is hot the infant's temperature rises; when it cools the temperature falls, and there is some risk both of overheating and of chilling in the marked fluctuations which may thus occur. By using three or four smaller bottles kept at a greater distance from the child, and refilling each in turn at short intervals, it is possible to achieve a much greater uniformity of temperature until the heating capacity of the arrangement is proved. The rectal temperature of the child should be taken at short intervals. Over-heating may be no less harmful than chilling. Exposure of a feeble infant in dressing and undressing and in making a medical examination should be avoided. The clothing should be as simple as possible, and sometimes it is the easiest plan to keep a weakly child enveloped in cotton wool.

2. The child must be put to the breast at regular intervals, and every attempt must be made to induce him to empty it, remembering that it is only when the breast is sucked completely dry that the amount of milk secreted begins to increase, and that with incomplete emptying the daily total declines. To achieve the best results a three hourly interval is not too long, each breast being used alternately. When the infant refuses to suck more the breast-pump should be used and an attempt made to empty the breast completely.

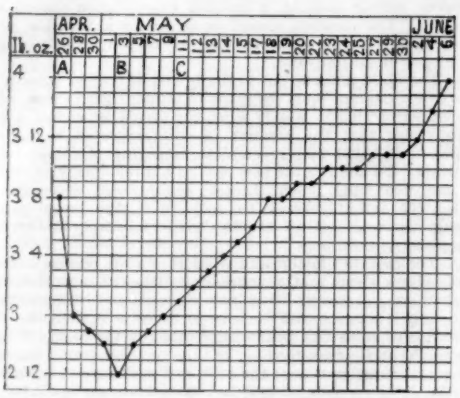
3. The mother's health and comfort should receive attention. Rest, sleep, and a nourishing diet, with a sufficiency of fluid, are necessary. These points should not be neglected, although it may be that their importance in influencing the secretion of milk has been exaggerated in the past. While overwork and under-feeding of the mother are common causes of deterioration of the milk and of failure of lactation in the later months, they play, comparatively speaking, a small part in the first establishment of the secretion. There has been some confusion in the past between the causes which delay the establishment of the secretion in the first instance and the causes which tend to a deterioration of its quality when established.

4. Attention should be directed to any cause which may be detected for the failure of lactation, and if such be found suitable treatment should be instituted. If atelectasis be present immersion in a hot bath, with momentary douching of the head and neck with cold water, is often effective, for the time being, in restoring both vigorous breathing and more powerful suction. Of course, care must be taken to avoid abstracting too much heat from the infant in this process; the contact with the cold water must only be momentary, before the infant is again immersed in the hot water. In one well-marked case of atelectasis recently in Miriam Ward we had to repeat this manœuvre several times daily for more than a week, and although the good effect was always transitory it was astonishing to see how well the child sucked the bottle for a short time after the bath. Infections, such as bronchitis, broncho-pneumonia, pyelitis, congenital syphilis, umbilical sepsis, &c., must be treated upon the usual lines. Nasal obstruction may be lessened by syringing the nostrils with a few drops of a solution of bicarbonate of soda. Cleft palate and hare-lip may require a surgical operation. Bednar's aphthæ should be touched with silver nitrate. The pain of cracked nipples may be eased by using a shield under which the fissure may be treated by cocaine ointment, orthoform in powder, or the compound tincture of benzoin.

5. One last device may be mentioned. It is incomparably the most effective of all, although, unfortunately, in the nature of things it is one which can only be used in exceptional circumstances. More than once among the poor out-patients I have induced the mother to put back to the breast the child of a year old which had been weaned only a short time before. A few hours of starvation will often overcome any reluctance on the part of the child. If he can be induced to suck a few days suffices to overcome all the difficulty. The chart represents the weight curve from the first day of life of a premature infant born recently in the hospital. On the eighth day the weight had fallen to 2 lb. 12 oz., and it became evident that the child would die. The woman in the next bed had a vigorous infant a fortnight old, weighing 8 lb., and she consented to nurse the tiny premature child at her own breast and to lend her baby to the other mother. The child of 8 lb. was placed six times a day on the dry breasts of the mother of the premature child and attacked his task with a will. Eight days later the premature baby was returned to his own mother, whose breasts by this time were flowing easily. The breast secretion once established did not fail, and the baby gave no further cause for anxiety. I think we may say that in all probability the

life of this child was saved by this manœuvre. It goes without saying that since prematurity is always suggestive of syphilis all caution must be used in adopting such a device.

In these ways we may endeavour to curtail the period of inanition and to minimise its ill effects. In the great majority of cases patience will be rewarded and the breast



A, Mother's breast. B, Breast of woman in adjoining bed. C, Returned to mother's breast.

secretion will have become established long before any disquieting symptoms appear. On the other hand, it is not to be denied that sometimes we shall fail. We must remember that in prolonged inanition the tolerance for food rapidly falls, and that if we wait until the infant is in a seriously depressed condition we shall be apt to find that the inanition becomes complicated by dyspepsia as soon as a more liberal supply of food is given. Symptoms which point to the advisability of giving more food are a rapid loss of weight uninfluenced by the measures described above, attacks of cyanosis or of syncope, and slowness, feebleness, or irregularity of the pulse. If it is decided to give some additional artificial food an attempt should be made to utilise the milk which has been drawn off by the breast pump after the infant has finished sucking. If this addition proves insufficient nothing remains but to give artificial food, preferably in the form of a single feed in the evening, while breast feeding is continued during the day. As a rule, however, but one result follows—a further decline in the amount of milk secreted—necessitating a further increase in the amount of the artificial food until the child is completely weaned. Inanition is of all degrees, and in the most severe cases, or when the cause at work is obstinate and persistent, we shall no doubt often fail; but that our failures will be greatly reduced in number by a true appreciation of the etiology of inanition and of the harm which may be done by unnecessary and premature interference there can, I think, be no doubt.

SYPHILIS: ITS DANGERS TO THE COMMUNITY, AND THE QUESTION OF STATE CONTROL.[1]

BY H. C. FRENCH, M.R.C.S. ENG., L.R.C.P. LOND.,
MAJOR, ROYAL ARMY MEDICAL CORPS.

I HAVE the honour to address you on the subject of Syphilis: its Dangers to the Community, and the Question of State Control. The Section of Forensic Medicine (XIX.) is, as you know, acting jointly with that of Dermatology (XIII.) in discussing this difficult problem of our time, and all time, in the interest alike of the State and of the individual. The council of the Section of Forensic Medicine have requested me to deal mainly with the subject of *State Control*. This explains the brief reference to the first part of the subject under discussion.

The dangers to the community in Great Britain, however, were very fully considered in a recent important discussion on syphilis, with special reference to its prevalence and intensity in the past and at the present day, its relation to public health, including congenital syphilis, and the treatment of the disease, held on June 10th, 17th, 24th, and July 8th, 1912, by the Royal Society of Medicine, London. This discussion extends to 214 pages of printed matter, and was published in the Proceedings of the Royal Society of Medicine in October, 1912, and later in book form. The debate dealt more with the dangers to the community in their general aspects, and no concrete scheme of State control was put forward as regards Great Britain, although such already exists in many of her colonies as well as in the Indian Empire for many years past (*vide* Appendix B). New York and Australia have recently taken the matter in hand.

The question of venereal diseases must soon become crucial in Great Britain under the Insurance scheme. If persons so suffering reap the benefits, what course is to be pursued in the case of those who do not report sick early, and develop complications causing prolonged invalidity as the result of concealment or delay in seeking treatment? Venereal diseases also must become notifiable in time, like ophthalmia neonatorum, by reason of the heavy cost to the State apart from all other considerations. If the principle is admitted of protecting the eyesight from the effects of gonorrhœa at birth, surely old age is entitled to a measure of protection against syphilis causing blindness due to optic nerve atrophy, and general paralysis of the insane. It is to be hoped, therefore, that some definite resolutions may now be drawn up by this International Medical Congress, and an earnest attempt made to ensure legislative control of venereal diseases, a subject quite apart from the State regulation of vice. These diseases cost the country millions of pounds; they fill many homes with preventable misery, they overcrowd our workhouses, prisons, and lunatic asylums with imbeciles, idiots, criminals, epileptics, and other insane persons; they sap the vigour of the nation, and if uncontrolled may eventually endanger its very existence.

Dr. Holland, in 1854, estimated that in the United Kingdom there were at least a million and a half persons infected with syphilis each year. Dr. Mott states that possibly 3 to 4 per cent. of cases infected with syphilis are followed by parasyphilitic affections such as tabes and general paralysis. Further, we know that 11 per cent. of male private and 8 per cent. of male pauper admissions to lunatic asylums in Great Britain are due to this cause. The Wassermann reaction now throws a searchlight on idiocy, imbecility, and epilepsy, due to acquired or to congenital syphilis, which were not previously recognised as due to this cause. As the feeble-minded number 190,000 and certified insane persons 120,000, the part played by syphilis in the causation of both conditions requires investigation. Dr. Le Noir gives 125,000 male syphilitics in Paris in the year 1899. Professor Fournier in 1899, judging by hospital practice, states that in Paris there are 17 syphilitics out of every 100 adult men. There is no reason to suppose, therefore, that a large city like London, without any control, and about 150 hospital beds, suffers less from this disease than Paris, with 2000 beds, or Berlin. In both of these much smaller cities control and some means of segregation exist.

Taking the British Army as the only existing index to the relative prevalence in civil communities, as statistics of disease are available in the army but not in civil life, the average number of cases constantly on the syphilis register for two to three years and undergoing treatment is probably 3 to 4 per cent. of troops, but numerous other cases have previously suffered, and have been struck off the syphilis register. The percentage of freshly contracted syphilis in my experience in the past few years is much higher amongst troops in England, more especially in London and Woolwich, than amongst those abroad. This is due to lack of control at the source and numerous other factors.

Dr. Bulkley has tabulated 110 epidemics of innocent syphilis with a total of 3000 victims. The causes of conveyance, apart from heredity, include "nursing, hand-rearing of infants, breast-drawing, accouchements, vaccinations, tattooing, household utensils, dental, barber's and other instruments, kissing, pipes, &c." At Philadelphia recently there was an outbreak of eight cases of syphilitic chancres of the lip as the result of playing "kiss in the ring." Fournier, in Paris, found that fully 25 per cent. of all the females whom he had seen in private practice had

[1] A report presented at a joint session of the sections of Dermatology and Syphilography and of Forensic Medicine at the Seventeenth International Congress of Medicine, London, 1913.

contracted the disease innocently and undeservedly. Of the married females, in 75 per cent. of cases the disease was traced to the husband. Tarnowsky quotes the case of three families with 20 children, from whom only one healthy adult survived. This was in the intelligent class of society. At Moscow, Russia, in a period of ten years there were 2002 births from syphilised parents. Of these 1425 (71 per cent.) died. In regard to congenital syphilis, therefore, we are not justified in supposing that in England we stand on a separate pedestal.

As syphilis causes innumerable miscarriages and abortions, and gonorrhœa is responsible for a very large percentage of women's ailments, including sterility, it would appear that from a mere population point of view, as well as for the perpetuation of a healthy race, control of venereal diseases at the source has become absolutely essential. This is no longer a subject of purely academic interest, but perhaps the most important social problem of the day. In Chicago the Church is objecting to marry persons without a medical certificate of physical and mental fitness. It is considered that a large amount of unhappiness causing divorce is due to venereal diseases; and in this country it constitutes legal cruelty.

Professor Fournier states that syphilis does not only strike those who expose themselves to it, it strikes also and in a greater number *those who do not expose themselves. It destroys infants* by hecatombs, 48 per cent. in private practice in the city of Paris, and 84 per cent. in the St. Louis district. Is there not reason to suppose that half or one-third of the infants destroyed by syphilis this year would in 20 years have been soldiers? As regards innocently acquired and congenital syphilis, Dr. Bulkley, New York, states "that in Russian villages, where prostitution is unknown, syphilis decimates families, and is spread in an innocent manner." It is, therefore, not merely a question of letting the guilty suffer, but of death to the innocent. This is fully exemplified by infantile mortality, or later realised in the seclusion of insane asylums—or the retirement of the poor-house.

Alcohol unquestionably plays an important part in conducing to sexual immorality, and if disease is contracted in perpetuating syphilis and in causing relapse. In conjunction with syphilis alcohol is responsible for 27 per cent. of private and 31 per cent. of pauper male admissions to lunatic asylums in the United Kingdom. The view, however, is not concurred in that the reduction in venereal diseases in the British Army in recent years is due to the growth of temperance (*vide* Table IV.). A reduction in alcoholism was non-existent prior to 1907 in India. Venereal diseases, however, subsequent to the Cantonment Act, 1897, have steadily decreased every year until 1910, both as regards admission and constantly sick ratios. I do not acquiesce in the statement "that about 90 per cent. of infections take place while the victims are under the influence of alcohol." In order to arrive at an independent conclusion I have recently tabulated 461 cases of soldiers admitted to hospital under my care in the past year at Malta with freshly contracted venereal disease, and find that 203 were total abstainers; 112 belonged to Section B Army Temperance, or consumed less than two pints of beer daily; 46 consumed three pints; and 100 consumed over three pints a day. When due allowance is made for all these factors, it is not possible on the evidence to arrive at the conclusion that the great reduction of syphilis at Woolwich and Malta (Tables I. and II.), and of venereal diseases amongst 70,000 British troops in India, since 1897 (Tables III. and IV.), and in the grey oil injections for out-patients. 3. Soamin and arsacetin tried but discarded.

TABLE I.—*Woolwich, England: Syphilis In-patients (Local Troops) (Diagnosis and "Early Intensive" Treatment).*

	Year.	Average daily strength of garrison.	Admissions—actual number.	Constantly sick—actual number in hospital daily.	Ratio per 1000. Admissions.	Ratio per 1000. Constantly sick.
No control at source.	1904	5311	331	56	62·32	10·70
	1905	4966	202	30	41·49	6·14
	1906	5096	129	14	25·12	2·72
	1907	4702	87	13	18·50	2·71
	1908	5666	53	6	8·75	1·28

1. Grey oil intramuscular mercurial injections for in-patients and out-patients in 1904. 2. In 1905–8 I instituted mercurial inunctions for in-patients as a general rule in early stages, and reserved mercurial

TABLE II.—*Syphilis: Malta Command.*

	Year.	Average daily strength of garrison.	Admissions—actual number.	Constantly daily sick in hospital—actual numbers.	Ratio per 1000 admissions.	Ratio per 1000 constantly sick in hospital.	Number of soldiers on syphilis register.	Number of cases contracting syphilis in Malta.
Control at source.	1908	6030	112	14·02	18·6	2·33	158	89
	1909	6392	125	12·41	19·6	1·94	171	87
	1910	6769	83	9·21	12·3	1·36	160	35
	1911	6686	29	2·88	4·3	0·42	146	11

1. Confidential medical *notification* of venereal diseases was instituted in October, 1909. Diseased persons segregated and treated in hospital. 2. In 1912 to May 31st only five cases of syphilis of very mild type (attenuated) contracted in Malta amongst 7000 troops. 3. Treatment in 1908 and to September, 1909, intramuscular injections of grey oil. 4. In September, 1909, I instituted inunctions of ung. hydrarg., B.P., for in-patients in the early stages in ordinary cases, and reserved grey oil injections for out-patients. 5. Salvarsan was not used.

TABLE III.—*Syphilis: India.*

	Year.	Strength.	Admissions—ratio per 1000.	Constantly sick—ratio per 1000.	Invalids sent home.	Deaths.
No control	1895	68,331	86·3	8·84	321	15
	1896	70,484	97·7	10·47	448	16
	1897	64,531	106·2	11·65	611	26
Control.	1898	65,397	88·2	9·51	547	20
	1899	67,697	71·9	7·54	417	16
	1900	60,553	62·5	6·59	344	15
	1901	60,838	58·3	6·03	355	8
	1902	60,540	49·9	4·85	286	24
	1903	69,613	46·7	5·04	190	12
	1904	70,413	49·5	5·45	175	18
	1905	70,994	35·7	4·80	75	13
	1906	70,193	27·7	3·55	120	11
	1907	69,322	22·2	3·02	76	5
	1908	68,522	15·8	2·37	59	3
	1909	71,556	16·3	2·23	26	2
	1910	72,491	14·5	2·01	18	1

1. Control at the *source* (Cantonment Act) began October, 1897. The above figures deal with unquestionable syphilis. Out-patient treatment also began in 1898 for syphilis. Systematised in 1904. 2. Prior to 1904 all venereal sores, whether "soft chancre" or early "primary syphilis," were included under a heading Primary Syphilis in all Army Returns. I do not include them as soft chancres were not differentiated. 3. From 1904 to 1910 syphilis and soft chancre are absolutely differentiated in British Army returns and registration of syphilis arranged. 4. Loss of service pay for venereal disease began in April, 1904. 5. Loss of proficiency pay for venereal disease began October, 1906. 6. Salvarsan not used.

TABLE IV.—*India: Admissions and Constantly Sick Ratio per 1000 for "All Venereal Diseases" and Alcoholism contrasted.*

	Year.	Venereal diseases. Admissions.	Venereal diseases. Constantly sick.	Alcoholism. Admissions.	Alcoholism. Constantly sick.
Control at the source.	1898	303·5	27·97	3·3	0·12
	1899	250·4	22·55	3·1	0·12
	1900	231·3	21·19	3·7	0·14
	1901	211·5	18·35	4·4	0·13
	1902	209·6	17·60	4·4	0·16
	1903	187·3	16·67	2·4	0·11
	1904	200·4	17·63	3·1	0·14
	1905	154·3	15·37	2·8	0·13
	1906	117·4	12·32	2·4	0·11
	1907	89·9	10·61	1·3	0·05
	1908	69·8	8·85	1·0	0·04
	1909	67·9	8·52	0·9	0·03
	1910	58·9	7·79	0·5	0·02

1. Control of venereal diseases at the source commenced October, 1897,

Cantonment Act, India. 2. Service pay lost for admission to hospital for venereal diseases or alcoholism from April 1st, 1904. 3. Proficiency pay lost for admission to hospital for venereal diseases or alcoholism since October, 1906. 4. Note the yearly reduction of venereal disease from 1898 to 1910 (Paras. 1, 5, 6, 7). Alcoholism remained constant from 1893 to 1906. From 1907 to 1910 the reduction is mainly due to (2) and (3). 5. Out-patient treatment of soldiers for syphilis which was instituted in 1898 in some stations, was in 1904 made universal by regulation in India and throughout the army generally. This does not apply to gonorrhœa and soft chancre, which are much reduced. 6. Changes of nomenclature of venereal diseases in 1904 ensured more accurate diagnosis of syphilis and the collection of statistics in 1904 was arranged on a better basis. 7. The Cantonment Act Amendment Act, 1895 (v. of 1895), Sect. 2, precluded the examination of prostitute women for the purposes of ascertaining whether they suffered from venereal diseases. The admission ratio per 1000 for "All Venereal Diseases" was 470 in 1895, 444 in 1896, and 422 in 1897. The Cantonment Code of 1899 (in force since October, 1897) permits, in cantonments where troops are stationed, the examination and detention of diseased women (Para. 203, Appendix B). The admission ratio for "All Venereal Disease" consequently decreased year by year until 1910, when it was only 58·9 per 1000. "The Constantly Sick" in hospital fell from 40·83 per 1000 in 1895 to 7·79 per 1000 in 1910 (*vide* Table V.). Surely a gratifying result which defies the criticism of all time. The decrease occurred in all forms of venereal diseases—not only syphilis.

army generally, can be fairly attributed to increased temperance. The reduction is primarily due to early and effectual control of diseased persons, both men and women, as well as to registration of syphilis, disciplinary restrictions, systematising of statistics, and the *confidential* notification of disease and the application of initiative to meet the varying circumstances governing local conditions.

State Control.

Coming to the important question of prophylaxis, there are two essentially different modes of State intervention. First, the system known as Regulation, which implies registration and attendance of prostitute women. The second mode is "to require doctors and others to notify all cases of actually existing disease in persons in whatever class or sex to the health authority, who inquires into the means of segregation and treatment (as in the case of other infectious diseases), and is empowered to remove the patient to hospital if necessary." In the case of poor persons this implies a certain outlay for hospital accommodation and food, but it repays the State a hundredfold. Notification is not unequal between men and women, nor does it unduly encourage immorality. Inquiries extending over 20 years in Brussels elicited the fact that amongst 1523 out of 3505 women the primary cause of prostitution was alleged by the women to be poverty.

A Royal Commission on the Blind, the Deaf, and the Dumb, which reported to both Houses of Parliament in the year 1889, estimated that about 7000 persons in the United Kingdom had lost their sight from ophthalmia neonatorum, and assessed the cost to the State for these cases of preventable blindness at £350,000 a year. This disease, which is commonly due to gonorrhœa, is recently notifiable in some parts of England.

It is interesting to trace the history of what has been done in this country. In 1896 the Secretary of State for the Home Department was approached with the object of appointing a Departmental Committee to inquire into the subject of the prevalence and the treatment of venereal disease amongst the population of England. The Government, whilst admitting the importance of the subject, did not think the time had arrived for taking action in the matter because there was not then a "sufficiently informed public opinion" on the disease to justify them in doing so. This alleged reason no longer remains as regards any disease, and the Insurance Act will prove that such a policy may be financially disastrous in regard to venereal diseases, as previously explained.

As the *British Medical Journal* pointed out in 1896, it would seem that in consequence of this state of things a considerable number of women do not receive proper treatment in the early stages of syphilis, and seek admission to various homes of refuge in London administered by ladies who devote their lives to work of charity of this kind. The ladies have been so deeply impressed with the extent of the misery caused by these maladies in young women that they associated themselves into a numerous and influential body, determined to do their utmost to secure measures as may be thought best, after due inquiry, to check the ravages of syphilis. The Council of the British Medical Association then appointed a committee, and urged on Her Majesty's Government the necessity for appointing a Departmental Committee to inquire: (1) As to the extent to which venereal disease prevails amongst the *civil* population of Great Britain, irrespective of its temporary increase or decrease; (2) to collect information as to the present arrangement for the treatment of venereal diseases, the distribution of hospitals, and the number of beds available in different places, and to make suggestions as to the more efficient provision for the treatment of the disease; (3) to collect suggestions and to express opinions as to the means that can be devised for preventing or limiting the spread of venereal disease among the civil population of this country.

The above resolution was also forwarded to the President of the International Congress on Venereal Diseases, which met at Brussels on Sept. 4th, 1899, urging the Congress to support the resolution by requesting the Governments of the respective delegates to pursue a similar investigation with a view of devising a uniform plan of action to mitigate the spread of this terrible disease among the people of Europe. This was finally embodied among the eight resolutions of the Congress. Further, the Royal College of Surgeons of England, in the annual report for the year 1897, contains a statement to the effect that the Council of the College had forwarded an address to the Secretary of State for India regarding the prevalence of venereal disease amongst the British troops in that country. In this address the Council observe: "We therefore express an earnest hope that Her Majesty's Government may take effective means to check the ravages of the disease (venereal) which not only undermines the constitutions of those who contract it in the first instance, but, by reason of the many ways in which it may be transmitted, destroys the health and happiness of countless persons, and induces in the children of those originally infected diseases of a most formidable character." So far as England is concerned the matter died a premature death, whilst "Nature breeds, perverse, all monstrous, all prodigious things," as in the age when Milton wrote.

As regards India, there was a meeting on this subject at St. Martin's Town-hall, London. "Admission was by ticket for which a charge was made, and nine-tenths of the audience were women." This effected the passage of the Cantonment Act, India, which came into force in October, 1897, with such marvellous results and stupendous saving to the Indian Government. India, therefore, must be our principal guide as to the effect of control at the source, as there are some 70,000 British troops always stationed there under more or less identical conditions. In India, in 1895 to 1897, and previously, there were 3000 soldiers constantly sick in hospital with venereal diseases (Table V.). These diseases

TABLE V.—*India: Admissions and "Constantly Sick" Ratios per 1000 for "All Diseases" and "All Venereal Diseases" Contrasted.*

	Year.	Average strength.	Admissions—ratio per 1000 all diseases.	Admissions—ratio per 1000 all venereal diseases.	Constantly sick—ratio per 1000 all diseases.	Constantly sick—ratio per 1000 all venereal diseases.
No control.	1895	68,331	1460·0	470·0	93·61	40·83
	1896	70,484	1386·7	444·4	93·85	39·43
	1897	64,530	1500·4	422·5	101·38	39·41
Control at the source.	1898	65,397	1454·2	303·5	90·75	27·97
	1899	67,697	1148·7	250·4	73·00	22·55
	1900	60,553	1143·2	231·3	71·71	21·19
	1901	60,833	1104·3	211·5	66 9	18·35
	1902	60,540	1078·4	209·6	66·0	17·60
	1903	69,613	1035·5	187·3	63·17	16·67
	1904	70,413	897·0	200·4	57·14	17·63
	1905	70,994	833·6	154·3	52·41	15·37
	1906	70,193	871·0	117·4	51·47	12·32
	1907	69,332	756·4	89·9	46·38	10·61
	1908	68,522	836·2	69·8	45·81	8·85
	1909	71,556	716·9	67·9	40·26	8·52
	1910	72,491	576·5	58·9	31·93	7·79

1. Control at the *source*, Cantonment Act, October, 1897 (*vide* Appendix B). 2. *Out-patient* treatment of syphilis commenced in 1898 and was systematised by regulations in 1904. This does not apply to gonorrhœa and soft chancre, which are much reduced. 3. Loss of "service"

pay in 1904 and proficiency pay 1906 for "venereal disease" in addition to the ordinary hospital stoppage of 7*d.* applicable to all diseases. 4. Ratios for venereal diseases yearly less. These diseases in recent years account for 20 to 25 per cent. of the "Constantly Sick" for "All Diseases," as contrasted with 40 to 45 per cent. in the years before control (1895-7).

caused 32 per cent. of the admissions and 42 per cent. of constantly sick in hospital from all diseases. These numbers, in 1910, have been reduced to 500 soldiers constantly sick in hospital, and venereal diseases caused only 10 per cent. of the admissions and 25 per cent. (1909, 20 per cent.) of the constantly sick in hospital from all diseases. This represents a yearly saving to that country of £55,515, when reckoned at 1*s.* per diem for hospital diet; and this quite apart from loss of service. During the same period the annual number of invalids from India to England for syphilis have been reduced from 611 in 1897 to 18 in 1910. A trained soldier landed in India costs the State £100, so that the annual saving in invalids alone is enormous. Whereas in the United Kingdom in 1910, where no control at the source exists, venereal diseases in an average strength of 108,614 troops accounted for 31·8 per cent. of the constantly sick in hospital for all diseases. These latter figures probably indicate the average prevalence in civil communities in the United Kingdom, but no statistics are kept in civil communities.

The paragraphs relating to sanitary prophylaxis in India are briefly given elsewhere (Appendix B), and the underlying principles considered in detail.[2] The practical result has been that the Cantonment Act in conjunction with prophylaxis by treatment has effected an enormous reduction in India for all venereal diseases from 537 admissions per 1000 in 1895 to 59 admissions per 1000 in 1910. This demonstrates for all time the efficacy of adequate control (Tables III., IV., V.). In some British Colonies prophylactic methods already exist as regards control at the source. They support the good results obtained in India. Foreign medical opinion on this subject is given in Appendix A, India and Colonies, Appendix B. Briefly considered, some essential opinions in the control of prostitution and venereal diseases culled from 20 years' practical experience in many countries are as follows:—

1. Confidential medical *notification* of disease on *prima-facie* evidence and medical treatment for short periods in hospital in the early actively contagious stages of disease, the steps taken being dependent on environment and the circumstances of the individual case. As syphilis, five times out of six, is spread by clandestine prostitution, according to the experience of France, Belgium, and Germany, such notification by medical men more adequately meets this difficulty. Cases (without names) are reported to the health and police authorities when the exact address is known, and arrangements are then made for the segregation and treatment of diseased persons as in the case of other diseases. This was brought forward two years ago.[3] I have practised it for three years at Malta with marked success (*vide* Table II.). The concrete scheme in Appendix B is vastly superior to a system of continental regulation, and has borne the test of 15 years.

2. The effectual control of openly practised prostitution by adequate police measures for irreclaimable prostitutes. Such control of openly practised prostitution is attended by incalculable benefit not only to the women themselves but also to the civil community, in the reduction of venereal diseases and a reduction in the number of prostitutes. When control does not exist, or is temporarily removed, disease becomes as frequent among such women as amongst clandestines.

3. The rigid suppression of *souteneurs* who act as middlemen and live on the earnings of women, and even marry with this object in view. These men are often criminals of the worst description and levy blackmail on their clients whilst they batten on the poverty of the victims in their clutches. A valuable short Police Bill for the suppression of these men and the white slave traffic has recently become law in England. This will tend to prevent London being made the clearing-house for Europe for prostitutes sent from other countries, or who move owing to disease.

4. The protection of orphan children and minors and the suppression of begging in the streets by children under 12 years of age. This includes the suppression of women *souteneurs*, who adopt orphan children to live on their immoral earnings when, from age or disease, they themselves have lost their charms. No girl under 21 years of age should be allowed to reside in a brothel in any capacity.

5. The suppression of loitering and solicitation in the streets by women or men acting on their behalf. This is possible in England under the Town Clauses Act, 1847. If men want prostitutes they must go and look for them where they lodge. This would lessen the work of the police, who are now obliged for hours at night to patrol in large numbers certain parts of the town. London is about the only European city where such a state of things exists. The public display of immorality discouraged in our theatres we encourage by the parade of prostitution in the streets. I recently read that some 70 per cent. of female prisoners are drawn from the unfortunate class. Surely a hospital, or a refuge, is more humane, as reclamation is possible.

6. The provision of "free voluntary dispensaries" where women who do not openly practise prostitution (clandestines) may be treated and reclaimed. These should be open at hours which are suitable to the working-class; this hour is usually the evening. Quite apart from the publicity involved, many poor persons cannot afford to wait in the out-patient department of the large hospitals for several hours. In addition to lock hospitals for irreclaimable women, I would advocate that sufficient beds be set aside for venereal diseases in every large London hospital, and special courses of instruction arranged for the students, as in Paris.

7. Removal of disorderly persons from the towns, and measures to prevent the return of evicted persons, and to prevent harbouring of diseased prostitutes in brothels.

8. The control of diseased merchant seamen who spread the worst form of disease at seaport towns. This is quite feasible under Port Sanitary regulations, by making venereal diseases notifiable.

9. Control of persons seeking medical aid from chemists for venereal diseases, who spread their complaints broadcast and maintain syphilis in perpetuity. Civil practitioners should notify soldiers on the active list seeking medical aid at civil hospitals, as they commit an offence under the Army Act, spread disease, and increase military inefficiency. This is the law in Prussia.

10. Circumcision of male infants and of all recruits entering the army with phimosis is strongly advocated on Jewish and Mahommedan evidence; this markedly protects against syphilis, and minimises medical inefficiency.

11. Punishment by fine or imprisonment for *concealing* disease, or for transmitting it knowingly to another. The former exists in the army (King's Regulations, Paragraphs 465, 504, 505).

12. The marriage of syphilitics discouraged by law under ten years from date of contracting the disease.

Such measures may not completely deal with this difficult social problem, but they are the condensed experience of practical work as opposed to theoretical considerations. They are the bedrock on which an adequate superstructure can be laid. They do not conflict with public morality, but minimise disease, misery, and death. That the disease can be effectually controlled in a community is fully exemplified by personal experience of this work in India in 1896 to 1901, Egypt, Malta, and England. The finding of a Royal Commission in England in 1870, and also in India, conclusively demonstrates the inestimable benefits derived from control and systematised effort (Appendix C).

(*To be continued.*)

[2] Syphilis in the Army, 1907, Major H. C. French, R.A.M.C.
[3] Brit. Med. Jour., Dec. 3rd, 1910; and THE LANCET, Nov. 18th, 1911.

BRITISH HOSPITAL FOR MENTAL DISORDERS AND NERVOUS DISEASES ("FORBES WINSLOW MEMORIAL").—The secretary of this institution informs us that owing to the death of Dr. Forbes Winslow the hospital is under the management of a new lay executive committee and is being entirely reorganised. An increased medical staff has been appointed, and as soon as the lease expires new premises will be found. There have been on an average 3000 borderland cases treated annually, and it is hoped that under the new auspices the usefulness of this institution will be considerably increased.

THE BACILLUS LEPRÆ: HAS IT BEEN CULTIVATED?

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DURING recent years various investigators have recorded the successful cultivation of the bacillus lepræ on artificial media. The means by which it is stated that the saprophytic existence can be induced vary considerably. Some assert that the organism will grow on ordinary media, others that media resembling in composition the tissues and fluids of the body are indispensable, while others claim that the cleavage products of proteins are essential. There is a lack of agreement in regard to the characters which the bacillus is said to exhibit in culture. Some writers state that the organism is consistently acid-fast, others are of opinion that it is not. Some claim that the organism becomes converted into a streptothrix, others contend that it becomes a non-acid-fast bacillus. In order to reconcile the inconsistencies and discrepancies it has been asserted that the leprosy bacillus is a "pleomorphic organism." The introduction of this term is unfortunate, since it has enabled various workers to assert that organisms which have no genetic relationship with the bacillus lepræ have evolved from that organism.

There are difficulties in inducing strongly parasitic organisms to adapt themselves to saprophytic conditions. When investigators overcome these difficulties it is customary for them to describe their methods in detail, so that their work can be repeated by anyone possessed of the necessary facilities and skill. The claims made by the original investigators are tenable provided that their accuracy is thus independently confirmed and the results obtained are uniformly consistent; this is not the case with the work which has recently been recorded in connexion with the cultivation of the leprosy bacillus. During the past 18 months work has been carried on here with a view to the cultivation of the bacillus lepræ. The experiments represent a uniform series of failures to obtain a growth of this bacillus, and it therefore appears desirable that they should be recorded.

Method of obtaining material.—The leper asylum is situated within half a mile of the institute and contains more than 250 patients. From among these, non-ulcerating cases were invariably selected; from dirty, ulcerating cases it is possible to cultivate all manner of organisms. The patients came willingly to the institute for observation, so that the work was done under much more favourable conditions than would have been the case had necessity compelled us to transport our materials to the leper asylum. In the first experiments bacilli were obtained by disinfecting the skin over a nodule, which was then punctured. On applying pressure to the punctured nodule blood exuded; this was wiped off, and the pressure continued until a serous fluid was obtained. This fluid, rich in leprosy bacilli, was inoculated on the media by means of a platinum loop. The procedure was not successful—all the tubes were contaminated. Aspiration of fluid from the nodules was next tried; only small amounts of juice were obtained, and the inoculated tubes were all contaminated. Normal saline solution was injected into the nodules, which were then massaged, and afterwards an attempt was made to aspirate fluid from the nodules. Only small quantities of fluid were obtained, and the inoculated tubes were contaminated.

The following procedure was eventually adopted with excellent results: 1. The skin over and around the nodule was painted with tincture of iodine prepared with 70 per cent. alcohol. 2. Sterile solution of cocaine was injected into the tissues surrounding the nodule. 3. A sterile suture of silkworm gut was passed through the peripheral part of the nodule. 4. A second application of tincture of iodine was made. 5. When the skin had dried, a horseshoe-shaped incision was made around the nodule and a flap of skin reflected from the subjacent tissues. 6. The skin flap was held back by means of the silkworm gut suture and from the subjacent tissues small pieces were excised; these were inoculated directly on to the media. 7. When a sufficient amount of tissue had been excised the skin flap was returned and sutured. Healing by first intention can invariably be obtained.

In a number of experiments conducted recently nodules on the ear have been selected. In these cases a simple incision has been made and the wound made to gape by means of sutures inserted on each side of the incision. From the depth of the wound pieces of tissue were excised. In every case a portion was excised for microscopical examination. Abundance of leprosy bacilli was invariably found, so that no objection can be raised on the ground that an insufficient number was inoculated.

Nutrient agar.—In experiments with blood, with serum, and with placental extracts, these fluids were mixed with equal parts of nutrient agar of the following composition: Powdered agar, 40 grammes; peptone, 10 grammes; salt, 5 grammes; glycerine, 60 c.c.; and meat extract to 1000 c.c. The preparation was carried out in accordance with the methods described in Eyre's "Bacteriological Technique." The medium was titrated with N/10 NaOH. When a medium of reaction + 10 was required the calculated amount of N.NaOH was added. When an alkaline or − 10 medium was required the calculated amount of N.Na_2CO_3 was added; only by this procedure can an alkaline nutrient agar be prepared.[1]

Incubation.—With the exception of some experiments carried out in accordance with the methods employed by Duval,[2] incubation was invariably effected in Hearson's incubators at a temperature of 37° C. It is stated that the bacillus lepræ requires an abundant supply of oxygen, and therefore cannot be grown in rubber-capped tubes; certainly no culture of the organism has been obtained by us when this procedure was employed. If the tubes are incubated in the ordinary way, evaporation proceeds and the medium becomes unsuitable. To obviate this, incubation in moist chambers has been recommended, but in our experience this procedure is unsatisfactory; moulds rapidly form on the plugs and, unless great precautions are taken, the media become contaminated. Satisfactory results are obtained by incubation in the ordinary way and from time to time adding, by means of sterile Pasteur pipettes, sterile distilled water to replace the water of condensation lost by evaporation.

Experiments with blood media.—In a previous series of experiments[3] carried out in connexion with the cultivation of the gonococcus, the Koch-Weeks bacillus and the diplobacillus of Morax-Axenfeld, it was found that these organisms could be cultivated readily on a + 10 nutrient agar which had been mixed with sterile, unheated ovarian or ascitic fluids. It was further found that ovarian fluid was more suitable than ascitic fluid. The ovarian fluid was apparently superior because of its higher albumin-content and the presence of blood derivatives. Following up the train of thought suggested by these experiments, citrated ox blood was employed in place of ovarian fluid and found to yield equally luxuriant cultures of these organisms. The excellent results obtained by the use of these media suggested the probability of their usefulness in the cultivation of the bacillus lepræ.

Sterile ox blood is not readily obtainable in this country because of the method by which cattle are slaughtered, and ovarian tumours are rarely met with in the hospitals. We therefore decided to employ citrated human blood. Test-tubes, each containing 0·0125 grm. of sodium citrate dissolved in 0·5 c.c. of distilled water, were sterilised in the autoclave for 20 minutes at 120° C. Under aseptic precautions blood was removed from the median cephalic vein and 5 c.c. added to each test-tube containing sodium citrate. Tubes, each containing 5 c.c. of the + 10 nutrient agar, were melted and cooled to 45° C. To each tube 5 c.c. of citrated blood were added; the contents mixed, sloped, and cooled rapidly by means of ice and salt.

The tubes were incubated for two days in order to test their sterility. In the first instance, the suitability of this medium for the growth of the tubercle bacilli was tested.

[1] Report of the Advisory Committee for the Tropical Diseases Research Fund, 1912, pp. 159–160.
[2] Duval, C. W.: The Cultivation of the Leprosy Bacillus and the Experimental Production of Leprosy in the Japanese Dancing Mouse, Journal of Experimental Medicine, vol. xii., p. 649.
[3] Usher and Fraser: Royal London Ophthalmic Hospital Reports, vol. xvi., part 4.

Sputum from a case of pulmonary tuberculosis was inoculated into the groin of a guinea-pig. Three weeks later the animal was killed and, under aseptic precautions, the spleen was removed; it was not apparently tuberculous, and a cursory examination of a stained smear did not reveal the presence of tubercle bacilli. Pieces of the spleen were inoculated into six blood-agar tubes, which were then capped and incubated at 37° C. Three of the tubes were contaminated, but in the other three growth of tubercle bacilli slowly occurred, and by the fourth week the growth was distinct. Subcultures were made on the blood-agar and profuse growths obtained. Only a relatively small number of bacilli were inoculated into the original tubes. In our experiments with leprosy bacilli it was designed to inoculate large numbers of organisms because of the possibility, which has been suggested, that many of the bacilli found in the tissues are dead.

Clegg[4] in his experiments claims to have cultivated the organism in symbiosis with amœbæ. He employed a 1 per cent. alkaline agar. Duval[5] claims to have confirmed the accuracy of Clegg's work. An alkaline blood-medium was therefore prepared. Tubes containing 5 c.c. of the − 10 nutrient agar were melted and cooled to 45° C. To each tube was then added 5 c.c. of citrated blood; after mixing, the tube was sloped and the contents cooled rapidly by means of ice and salt. The sterility of the tubes was tested by incubation for two days. Tubes containing + 10 blood-agar with 0·5 per cent. glucose and tubes containing − 10 blood-agar with 0·5 per cent. glucose were prepared for anaerobic cultures. These tubes were inoculated with material obtained from 17 non-ulcerating nodular cases of leprosy. From any one nodule the minimum number of tubes inoculated was four and the maximum number 13. In all, 82 inoculations were made on + 10 blood-agar, and 63 inoculations on − 10 blood-agar. Every tube received a piece of tissue, on an average equal in size to that of a rice-grain, and swarming with leprosy bacilli. The tubes were incubated anaerobically and aerobically. The maximum period of anaerobic cultivation was two months, and there was no apparent proliferation of the bacilli. The maximum period of aerobic cultivation was nine months. From no tube incubated aerobically has a culture of the bacillus lepræ been obtained; the organisms persist but, in our opinion, do not proliferate. They retain their form and their acid-fastness.

Experiments with blood serum.—Under aseptic precautions blood was collected from normal individuals and lepers. The blood, in quantities of 10 c.c., was placed in sterile test-tubes, and after coagulation had taken place the serum was transferred to sterile test-tubes and inactivated by heating at 56° C. for 30 minutes. Twelve tubes containing leper serum and 20 containing normal serum were prepared in this way. Two nodular cases of leprosy furnished the material with which the tubes were inoculated. Six inoculated tubes of leper serum and nine inoculated tubes of normal serum were incubated anaerobically. Once a week, or thereabouts, the cultures were removed and examined. Sterile distilled water was then added to the tubes requiring it, in order to bring the fluid up to its original volume, and anaerobiosis was restored. One tube was found to be contaminated with a stout non-acid-fast bacillus on the occasion of the first examination; the remaining tubes showed neither macroscopically nor microscopically that proliferation of the bacilli had occurred. Six inoculated tubes of leper serum and 11 inoculated tubes of normal serum were incubated aerobically. The original volume of fluid contained in each tube was restored from time to time by the addition of sterile distilled water. In none of the tubes has proliferation of the leprosy bacilli been observed. These experiments were discontinued after six months.

Experiments with serum-agar.—Serum was obtained in the manner described under experiments with blood-serum. Alkaline nutrient agar, with and without 1 per cent. glucose, and + 10 nutrient agar, with and without glucose, contained in tubes in quantities of 5 c.c., were melted and cooled to 60° C.; each tube then received 5 c.c. of serum. The mixtures were allowed to set as slopes. After incubation for 48 hours to test their sterility each tube received a portion of a leproma. The tubes containing glucose media were incubated anaerobically and the others aerobically. Eight tubes of − 10 serum-agar were inoculated from four cases and eight tubes of − 10 serum-glucose-agar were inoculated from four cases. Eight tubes of +10 serum-agar were inoculated from four cases and eight tubes of + 10 serum-glucose-agar were inoculated from four cases. On incubation several of the tubes of + 10 serum-agar showed minute dew-drops either adjacent to or at some distance from the nodule. On examination the dewdrops were found to contain leprosy bacilli. The question arose, Were these dew-drops colonies or merely droplets of moisture exuded from nodules swarming with lepra bacilli? Further observations have confirmed the accuracy of the latter view. These experiments have now been in progress for three months.

Experiments with Rost's medium.—For his initial cultures[6] this investigator employed a medium of the following composition: Distilled volatile alkaloid of rotten fish, 250 c.c.; weak lemco broth without salt or peptone, 250 c.c.; and milk, 50 c.c. Burmese preserved fish was not available. Williams has shown that distilled water may be substituted for the fish distillate. It was not, therefore, considered necessary to obtain this kind of fish and to dismantle an autoclave for the purpose of preparing the distillate. As in addition it is directed that the medium should be sterilised in the autoclave, it is difficult to see that much, if any, of this volatile alkaloid can remain in the medium.

Rost's medium was prepared in accordance with Williams's modification. Rost prepared his cultures by incubation at 30° C., but Williams has shown that incubation at 37° C. is equally effective; the latter procedure was therefore adopted. Rost states that leprosy bacilli proliferate when incubated at 30° C. along with blister-fluid contained in pipettes. Our experiments with serum did not confirm this observation. The method employed by him of squeezing out the fluid from a nodule exposed under aseptic precautions appeared to us likely to increase the risks of contamination and was therefore not adopted. Six tubes were inoculated with leprous tissue obtained from one patient, and six tubes were inoculated with tissue from another patient. None of them were contaminated, and films prepared from time to time did not show that the bacilli had proliferated. After incubation for two and a half months most of the media had evaporated and the pieces of tissue were transferred to fresh tubes. A month later films were prepared from all the tubes, but in no single instance was there evidence of proliferation. The organisms were acid-fast, and their appearance corresponded in every way with the acid-fast bacilli seen in films prepared from a fresh leprous nodule. Bizzare forms were never seen.

Experiments with Williams's medium.—This investigator claims[7] to have obtained initial cultures of the leprosy bacillus on ordinary nutrient broth when incubated at room temperature and on potato broth when incubated at 37° C. He gives no special directions for the preparation of potato broth; it was therefore prepared in the ordinary way. Pieces of tissue were obtained in the manner already described, and 12 tubes were inoculated from two cases of leprosy, six tubes from each case. The tissue from both cases swarmed with acid-fast bacilli. The tubes were incubated, as recommended by Williams, at 37° C. The cultures were examined from time to time, but proliferation of the bacilli was never observed. After incubating for two and a half months, as the media had almost entirely evaporated, the pieces of tissue were transferred to fresh tubes. A month later this experiment was ended. Films were prepared from the culture fluid in each of the 24 tubes. The films were stained and examined; only occasionally were bacilli met with, and these were invariably acid-fast. Films were prepared from the inoculated pieces of tissue. The cells had entirely disappeared. Bacilli, invariably acid-fast, were present in great abundance. They invariably showed the ordinary form of the leprosy bacillus, bizarre forms were never seen, and there was nothing to indicate that the bacilli were more numerous than in the tissue originally inoculated; in short, there was no evidence of proliferation.

Experiments with Duval's media.—Clegg[8] claims to have grown the bacillus in symbiosis with amœbæ. Duval[9] states that he has confirmed the accuracy of Clegg's work. He

[4] Clegg, M. T.: The Cultivation of the Leprosy Bacillus, Philippine Journal of Science, vol. iv., p. 403.
[5] Loc. cit.
[6] Rost and Williams: Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, No. 42.
[7] Ibid. [8] Loc. cit. [9] Loc. cit.

found[10] that symbiosis with amœbæ was not essential, and that, in symbiosis with organisms capable of decomposing proteins, a culture of the bacillus lepræ could be obtained on ordinary media. He also found[11] that the bacillus could be cultivated on media containing amino-acids; tryptophane and cystein are said to be the most important of these substances. Casein was not available here, and an attempt was made to prepare tryptophane from condensed milk, but the quantities obtained were insufficient for experimental purposes. As, in addition, he has stated that trypsinized egg medium will yield equally good results the work of preparing amino-acids was abandoned. We therefore prepared tubes of Dorset's egg medium and inoculated them with pieces of leprous tissue. The surface of the medium was then covered with a sterile solution of trypsin. Duval at first laid stress on the importance of incubation at 32° C., but later he appears to cultivate the organism quite readily at 37° C. Twenty-two tubes in all were inoculated; half of them were incubated at 32° C., and the other half at 37° C. After some days the media in the tubes had been digested into a slushy mass. No evidence was obtained from any of the tubes that proliferation of the bacilli had occurred.

Again following Duval, egg-albumin in Petri dishes was inspissated for three hours at 70° C. and each plate then received a piece of leprous tissue. The surface of the medium was covered with a sterile solution of trypsin and the plates incubated at 37° C. Most of them became contaminated, but in the few which remained uncontaminated there was no evidence of proliferation. Still later Duval and Wellman,[12 13] following Kedrowsky, recommended the use of placental agar. The method of preparation differs in some respects from that employed by Bayon.[14] Thirty tubes of placental agar, prepared by their method, were inoculated direct with leprous nodules excised from two lepers. The tubes were incubated at 37° C. and after a few days two of them were observed to be contaminated. The remaining 28 tubes have now been under observation for more than six months. A moist condition of the media has been maintained by the procedure already described. In none of these tubes is growth apparent macroscopically, and films prepared from the inoculated nodules show, in our opinion, persistence, but not proliferation of the acid-fast bacilli.

Experiments with Bayon's medium.—This investigator has employed various media, among others placental agar prepared according to the manner described by Kedrowsky. Bayon, in his published works, does not state the method of preparing the placental agar, but, in reply to a communication addressed to him, we were furnished with the necessary particulars, which are as follows: "A fresh placenta is chopped up fine, mixed with its weight of sterile distilled water, and then frozen hard for 12 hours. It is then thawed rapidly at a little over room temperature, say 20° C., and the juice squeezed out with a meat-press. The resulting liquid is rapidly passed through a paper filter and then put through a tandem arrangement of Berkefeld and Doulton filters. It ought now to be absolutely sterile, and has to be mixed with equal quantities of 4 per cent. glycerine-agar under aseptic precautions. The tubes cannot be heated; those that are found to be contaminated have to be thrown away."

Attention must be directed to the question of contaminated tubes. When the process described is accurately followed there should be, as was the case in our experiments, no contaminated tubes. Twenty tubes of this medium were inoculated from one case of leprosy and 15 from another. The tubes have now been incubated for over six months, a moist condition being maintained by the method already described. Not one of them shows contamination, and not one of them shows a culture of the leprosy bacillus.

Experiments with serum water.—Blood was drawn from the jugular vein of a sheep and the serum separated. The serum was mixed with distilled water in the proportion of one of the former to three of the latter. The serum water was filled into tubes and, in the case of those destined for anaerobic cultures, a thick layer of oil (paraffinum liquidum B.P.) was poured on the surface. The media were sterilised by heating for half an hour at 100° C. on three successive days. Eight tubes for aerobic culture were inoculated with pieces of leper tissue obtained from four cases, and 13 tubes for anaerobic culture were inoculated from five cases. The inoculated tubes have now been under observation for three months and no culture has been obtained.

Experiments with salt solution.—Tubes containing salt solution were prepared for aerobic culture and for anaerobic culture with oil as described in the previous section. Five tubes for aerobic culture were inoculated from three cases, and eight tubes for anaerobic culture were inoculated from four cases. The inoculated tubes have now been under observation for three months, and no culture has been obtained.

Experiments with Ringer's fluid.—Tubes containing Ringer's fluid were prepared for aerobic culture and for anaerobic culture with oil as described under serum water. Five tubes for aerobic culture were inoculated from three cases, and eight tubes for anaerobic culture were inoculated from four cases. The inoculated tubes have now been under observation for three months and no culture has been obtained.

Experiments with milk-agar.—Alkaline-agar was mixed with fresh milk in equal proportions. The mixture was transferred to tubes and sterilised. Nineteen slopes of this medium were inoculated from three cases. The inoculated tubes have now been under observation for three months and no culture has been obtained. Milk does not form a homogeneous preparation with + 10 agar and the mixture did not appear suitable.

Contaminating micro-organisms.—These may, for convenience, be grouped into: (1) contaminating micro-organisms introduced with, or at the time of introducing, the nodule; and (2) contaminating micro-organisms introduced subsequently, either by growing through the cottonwool-plug or during the manipulations entailed by the moistening of the media. In the early stages of our investigations, and before sufficient technical skill had been acquired, it not infrequently happened that contaminated nodules were inoculated. On incubation the presence of these organisms was demonstrated by the occurrence of a macroscopic growth, visible, as a rule, within a few days. Colonies of staphylococci call for no special comment. In some instances the nodule showed, on blood media, a brownish growth, at first limited but gradually spreading over the surface of the medium, either as a continuous growth or as isolated colonies. On examination these growths were found, in certain instances, to consist of a slender non-motile rod mixed with large coccoid spores. This organism is of importance, because it would appear that observers have mistaken such spores, when stained by the Ziehl-Neelsen method, for acid-fast organisms. This bacillus grows freely on ordinary agar, forming a yellowish, crinkled growth.

In this connexion reference must be made to Bayon's "acid-resisting" and acid-fast organisms.[15] Anyone who has worked with acid-fast organisms must be aware of the power with which these germs retain the carbol-fuchsin. It is wrong to describe germs as "acid-resisting" because they retain the carbol-fuchsin after momentary immersion in weak acid. It is an attempt to explain his transition stages from a non-acid-fast streptothrix to an acid-fast bacillus; and is, in our experience, unsound and misleading. In common with other workers we have isolated diphtheroid organisms, but these are ubiquitous and demand no special consideration. Granting that either of these contaminating bacilli has a genetic relationship with the bacillus of leprosy, how are the results observed in the following experiment to be explained? Ten tubes of blood agar were inoculated with pieces of leprous tissue from one nodule swarming with acid-fast organisms. On incubation there developed in one of the tubes a culture of a non-acid-fast organism. In the remaining nine tubes no cultures were obtained. It is

[10] Duval, C. W.: The cultivation of the leprosy bacillus from the human tissues with special reference to the amino-acids as culture media, Journal of Experimental Medicine, vol. xiii., p. 365.

[11] Loc. cit.

[12] Duval and Wellman: A new and efficient method of cultivating bacillus lepræ from the tissues, with observations on the different strains of acid-fast bacilli found in leprous lesions, Journal of Tropical Medicine, vol. xv., p. 221.

[13] Wellman, C.: A new and efficient medium for the isolation and growth of strictly parasitic or feebly saprophytic bacteria, Centralblatt für Bakteriologie, I. Abt., Orig., Band lxvi., p. 142.

[14] Bayon, H.: Acid-fast and acid-resisting germs cultivated from cases of human leprosy and their determination, Journal of the London School of Tropical Medicine, vol. i., p. 45.

[15] Loc. cit.

impossible to believe that in this nodule there was only one part of it in which a living acid-fast germ was present, and that that germ should on proliferation give rise to a non-acid-fast organism growing freely on ordinary media. In other instances the growth was found to consist of a streptothrix which grows readily but slowly on + 10 nutrient agar in the form of orange-red colonies and on − 10 nutrient agar in the form of greyish-brown striated colonies.

Smears prepared from nodules which have become contaminated with either a streptothrix or a bacillus invariably show masses of leprosy bacilli, because these organisms are so abundant in the tissues employed. If a tube of nutrient agar be inoculated with an emulsion prepared from such a nodule a growth will readily be obtained, and smears prepared from this may show the presence of some acid-fast bacilli among the contaminating organisms, because the former have been so numerous in the inoculated material. In the second subculture on nutrient agar acid-fast bacilli may or may not be found; most probably not. The fact that these contaminating organisms grow in the first subculture on + 10 nutrient agar is strong evidence against them having originated from leprosy bacilli, and, from the numerous examinations made, we have no hesitation in stating that they have no connexion with the leprosy bacillus. Several investigators have described in detail the gradual transformation of the acid-fast bacilli into non-acid-fast organisms. They must have been led into error by the mechanical transference of non-proliferating acid-fast organisms along with freely growing non-acid-fast saprophytes. We know of no organism with strongly parasitic characters and whose saprophytic existence can only be stimulated by the use of special media, which will grow freely in the first subculture on ordinary media. The organisms belonging to the second group are similar to those mentioned in the first group. Very infrequently moulds have been met with.

As a type of the contaminations met with the following instance may be quoted. On Sept. 9th, 1912, eight tubes of − 10 blood agar were inoculated with pieces of a leproma rich in bacilli. On the 16th a growth appeared on and around the piece of tissue in one of the tubes. Smears showed the presence of a spore-bearing bacillus and groups of acid-fast bacilli. The contaminator grew freely on +10 nutrient agar. On Jan. 6th, 1913, another of the tubes was observed to be contaminated. A brownish growth spread upwards from the water of condensation, but there was an interval of about three-quarters of an inch between the upper margin of the growth and the piece of leprous tissue. That interval was free from the growth, which examination proved to consist of staphylococci and a streptothrix. In smears prepared from the nodule there was the usual abundance of acid-fast bacilli, but no non-acid-fast bacilli and no streptothrix. Clearly, therefore, the streptothrix could not have originated from the lepra bacillus. Subcultures on +10 nutrient agar were prepared and the streptothrix isolated. An entire culture in + 10 bouillon, seven days old, was injected into the peritoneal cavity of a guinea-pig. The animal did not become in any way affected. Forty days later it was killed, and all the organs appeared to be healthy.

An entire culture in + 10 bouillon, 14 days old, was injected into the peritoneal cavity of a second guinea-pig. This animal died ten days later. The animal was well nourished and presented no external lesions. On opening the abdomen the great omentum was found to be rolled up and matted together, forming a sausage-shaped mass. This mass was full of caseous and purulent tubercles, mostly of about the size of a pin's head. There was a small tubercle on the surface of the bladder, two on the right seminal vesicle, and a group of them on the under surface of the diaphragm. The superior mesenteric glands were enlarged and contained caseous and suppurating tubercles. The spleen was enlarged and studded with nodules. The kidneys and suprarenal capsules were congested and swollen, but contained no nodules. On opening the thorax the upper part of the right lung was found to be solid and caseous. In the centre of the inferior lobe there was an aggregation of tubercles surrounded by congested lung tissue. Smears from the omentum showed the presence of the streptothrix mixed with cell débris and cocci. The streptothrix stained by Gram's method, but it stained poorly and had a granular, degenerate appearance.

The tubercles in every instance showed the same histological characters. The microscopic appearance of those in the lung was similar to that of the nodules which were found in the mesenteric glands and omentum. They consisted of sharply defined masses of irregular, necrotic nuclei, embedded in amorphous débris which stained pink with eosin. They were not surrounded by epithelioid cells, fibrous tissue, or small cell infiltration. Except in the lung they were surrounded by healthy tissue and did not appear to have given rise to any inflammatory reaction. No blood-vessels penetrated the substance of the tubercles, and there were no pathological changes in the capillaries of adjacent tissues. The tubercles within the mesenteric glands were situated in the neighbourhood of the divisions of the afferent lymphatic vessels which supply the cortex.

In the liver there were no macroscopic lesions, but microscopically numbers of tubercles were found in the portal spaces and in the portal zones of the lobules. It was possible to recognise the remains of degenerate liver cells lying amidst the necrotic material which formed these minute nodules, but the trabeculæ surrounding the tubercles appeared normal. Within the lung the nodules did not lie in healthy tissue, but were surrounded by a zone of consolidation in which the alveoli and bronchioles were blocked by masses of catarrhal cells. External to this the capillaries were intensely congested and the alveoli were filled with a fluid exudate. The presence of the streptothrix was not demonstrated in the lung, but it was found in sections of the lymphatic glands, mesentery, and liver, where it was similar in character to that seen in the smears made from the fresh organs. No acid-fast organisms were found in any of the sections or smears.

Summary.—Material for purposes of cultivation on various media has now been obtained from 32 non-ulcerating nodular cases of leprosy and 373 inoculations made on the various culture media. It is curious, in view of the findings of other investigators, that we have consistently failed to obtain a culture of the bacillus lepræ. There can be no doubt but that material swarming with bacilli has been employed on each occasion. This was clearly demonstrated by the microscopical examinations which were made in every case. From the examinations made of nodules which have been incubated on culture media for periods ranging from a few days to nine months, no evidence has been obtained that the bacilli had increased or lessened in number. Those investigators who have recorded an increase in the number of organisms as a result of microscopical examination must surely have failed to observe the bacterial richness of the material employed for inoculation. Anyone who has examined smears prepared from freshly excised leper tissues must be struck with the enormous masses of acid-fast bacilli present, and we are unable to comprehend how it is possible to state in a case where no macroscopic growth is apparent that an increase, recognisable only by the microscope,[16] has occurred.

THE PATHOLOGY OF THE CONDITION KNOWN AS PARASYPHILIS.[1]

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As is well known, the term "parasyphilis" was introduced by Fournier in 1894 to describe certain conditions of an atrophic or degenerative nature which might follow a syphilitic infection. According to the original concept and also that of Hermanides the term included under one name such diverse pathological states as dementia paralytica, tabes dorsalis, aortic disease, amyloid disease, and cutaneous pigmentations. These were looked upon as non-syphilitic

[16] Duval, C. W.: Loc. cit.

[1] A short account of the main pathological results deduced from an investigation of Parasyphilis by Dr. Henry Head, Dr. E. G. Fearnsides, and ourselves. The full account will be published as a series of papers in *Brain*.

sequelæ of syphilis—that is to say, degenerative processes not due to syphilis, but to which persons with a "syphilitic taint" were particularly liable. It will not be necessary to discuss the majority of the Fournier-Hermanides parasyphilitic conditions, since for many years the term has been applied only to dementia paralytica and tabes dorsalis and certain other diseased states of the central nervous system. The theory that parasyphilis depended essentially upon a previous syphilitic infection was hotly disputed by many, but accepted by such authorities as Erb, Gowers, and Vulpian. The evidence in support of the assumption was purely indirect, and thus only within quite recent times has it been generally accepted. The results of statistical investigations carried out by Erb and many others disclosed the fact that patients who developed parasyphilis were known to have had syphilis in a large percentage of cases, certainly as frequently as tertiary syphilitics were known to have been affected.

Again, the frequent association of syphilis and familial parasyphilis—that is, the occurrence of syphilis or parasyphilis in the wife or children of a parasyphilitic or syphilitic—was remarkable. Towards the same end tended the results of pathological anatomy. The stigmata of syphilis or active syphilitic lesions were often found in cases of parasyphilis; indeed, one and the same nervous system might be affected by the two diseases. The only direct evidence bearing upon the question was the experiment of von Krafft-Ebing. He selected nine cases of dementia paralytica in whom there was no evidence of syphilis and inoculated them with material from a chancre. During a period of observation, lasting 80 days, he observed no lesion at the point of inoculation, and from this result deduced that the subjects of the experiment were syphilitic.

It may thus be stated that the first phase of the syphilis-parasyphilis discussion ended with the general admission that syphilis was by far the commonest cause of parasyphilis, but not the only one. The disease itself was not syphilitic but was a degenerative process resulting from previous deleterious conditions (syphilis, trauma, alcohol, &c.). This view cannot, however, be said to have been unanimous. Many held that syphilis was an essential antecedent to parasyphilis and were not disposed to pay too much attention to those cases in which there was no evidence of syphilis. It was obvious that this was often extremely difficult to obtain.

A further step was then taken in the discussion in particular by the French school of neurologists, who held that parasyphilis was not only essentially associated with syphilis, but was actually an active syphilitic process of the central nervous system. Among those who held this view may be mentioned Marie and Guillain, Nageotte, Leredde, Redlich and Obersteiner, Orr and Rows, and many others whose works are now being remembered after a period of neglect. Marie and Guillain, and Orr and Rows looked upon the condition as a chronic syphilitic inflammation of lymphatic origin; while Nageotte, Leredde, Redlich and Obersteiner, on the other hand, considered that the nerve degeneration was due to a syphilitic meningitis. It cannot be said that these theories were accorded very serious attention, although from the results of the Wassermann reaction it was becoming obvious that syphilis was an essential factor in parasyphilis. It was generally held that, however desirable it might be to look upon parasyphilis as an active syphilitic process, there were two insuperable objections to the view: firstly, the lesion of parasyphilis was not a syphilitic process from the pathological anatomical point of view; and secondly, the effect of antisyphilitic treatment upon the course of parasyphilis was *nil*. Additional objections were also mentioned—namely, the marked lymphocytosis, the increased globulin content, and the positive Wassermann reaction in the cerebro-spinal fluid in parasyphilis, as opposed to the absence of these phenomena in cerebral syphilis.

The end of the second phase in the discussion is thus marked by the general acceptance of the invariable connexion between syphilis and parasyphilis, although the two diseases were held to be different. Parasyphilis was a non-syphilitic sequel of syphilis. Perhaps the view most generally known in this country is Mott's elaboration of the "abiotrophy" theory of Gowers. According to Mott, parasyphilis is due to a primary degeneration of the neurons "owing to a lack of durability, caused by the action of the poison combined with stress," a view which bears some relation to the toxin theory of von Strümpell—i.e., a post-syphilitic paralysis analogous to that occurring in diphtheria. It must not, however, be forgotten that the "primary degeneration" theory has been unacceptable to many for several years, and that while some of the "syphilis" theories already mentioned are open to obvious criticism, others have not been contradicted. Those who have closely followed the modern developments of experimental syphilis have, especially, been dissatisfied with the prevailing views on parasyphilis. This dissatisfaction has rested upon several factors.

Firstly, the idea of a "primary degeneration" is an abnormal pathological concept. Secondly, in parasyphilis there are invariably obvious signs of inflammation, and it does not appear obvious why such inflammation should be secondary to the nerve degeneration as supposed by Mott. Mott himself and Spielmeyer have shown that in trypanosomiasis a nerve lesion is present similar in type to that found in parasyphilis, and there is no reason to suppose that this lesion is not due to the trypanosome. Thirdly, many of the "insuperable objections" advanced against the syphilitic theory of parasyphilis are superable.

The inflammatory reaction in parasyphilis consists, as is well known, of a perivascular infiltration of lymphocytes and plasma cells involving the vessels of the pia and the branches of these which perforate the cerebral substance. In addition to this lesion are found the "primary degeneration" of the neurons and the proliferation of the glia. This microscopic picture is held to be non-syphilitic. We, on the contrary, pointed out in the Section of Neuropathology at the recent International Congress that this lesion is clearly explicable as syphilitic. The interstitial reaction is the same as that which we have found to be present in all stages of syphilis—namely, a perivascular accumulation of lymphocytes and plasma cells; while the nerve lesion is, in our view, directly comparable with the parenchymatous lesions of internal organs due to syphilis. If the parasyphilitic lesion is analysed on these lines, we find as evidence of a reaction to the spirochæta pallida, swelling and chromatolysis of the ganglion cells, proliferation of the neuroglia (fixed interstitial tissues), and the infiltration by the wandering cells mentioned above. All these changes are primary, and occur simultaneously as a reaction to the spirochæta pallida; they are not primary or secondary to one another. The result of this reaction to intoxication will be degeneration of the neurons if the injury is great enough, since the highly specialised parenchymatous cell has little or no power of regeneration. The final result will then be a degenerated parenchyma and consequent complete loss of function with its attendant and obvious clinical symptoms.

When this process is compared with a diffuse syphilitic inflammation of the testis, for instance, the points of similarity will be clear. A reaction of the parenchyma, of the fixed interstitial cells (fibroblasts), and of the wandering cells is apparent. The parenchyma cells degenerate and the testicle becomes atrophied or "diffusely sclerosed." The end result of the lesion is loss of function manifested by sterility. A diffuse syphilitic inflammation of the testicle is not, however, referred to as a "primary degeneration of the spermatogenetic cells" or as "parasyphilis of the testicle." It is described as a "diffuse orchitis," and similarly we should describe dementia paralytica as a "diffuse syphilitic encephalitis" and tabes dorsalis as a "diffuse myelitis of the posterior columns." Thus, in our view the objection that "the changes in the central nervous system in these diseases do not resemble those of true syphilitic lesions" (Mott and Sewell, 1913) does not hold. Undoubtedly they do not obviously resemble the "gummatous" process, but the similarity with "organ syphilis" is close.

The other great objection to the "syphilis" theory of parasyphilis—namely, that the result of treatment is *nil*—may be rapidly disposed of. Firstly, as a result of the recent advances in chemotherapy, the statement must be qualified. A benefit from treatment is frequently obvious. The incurability of parasyphilis is merely relative, and when the nature of the lesion is considered the reason is clear. The result of a therapeutic measure is judged by its effect upon the symptoms, but in parasyphilis the symptoms are due to nerve degeneration. Thus, since the nerves of the central nervous system are not reparable, the symptoms cannot be cured. Although the patient may, then, have little relief, it

does not follow that the syphilis causing the symptoms may not be cured. In fact, the cases of stationary tabes dorsalis with practically normal blood and cerebro-spinal fluid may be taken as examples of such. If the syphilitic process is stopped, the affected neurons will degenerate, but no other areas will be involved. It may be taken as a general rule that all highly specialised parenchymatous cells are liable to complete degeneration if sufficiently intoxicated. They have very little power of regeneration, and therefore the process, whether in the brain or testicle, is apparently unaffected by treatment.

Among the minor objections to this theory may be mentioned the lymphocytosis and globulin reactions in the cerebro-spinal fluid of parasyphilitics. The view that these reactions are confined to parasyphilis has been shown to be incorrect as a result of greater experience in cases of cerebro-spinal syphilis. Again, the positive Wassermann reaction in the cerebro-spinal fluid, which Mott considers to be due to an over-production of antibodies by the nerve cells, thus leading to their dissolution, is not confined to parasyphilis. At the very outset of the investigations, which have been carried on by Dr. Henry Head, Dr. Fearnsides, and ourselves, it became obvious that the reaction was frequently present in the cerebro-spinal fluid in cases of cerebro-spinal syphilis; and at the present time, with improved technique, it may be said to be constant in cerebro-spinal syphilis (Nonne); indeed, in our view it is not only constant, but also as strong quantitatively as in parasyphilis. The obviously unsatisfactory nature of the objections to the "syphilis" theory led us to state in 1911 that "there is no evidence, however, that parasyphilitic diseases differ in any way etiologically from other syphilitic diseases in the central nervous system."

During the past three years we have elaborated the views briefly expressed above, in conjunction with Dr. Head and Dr. Fearnsides, who also made a short communication at the recent congress.

At the beginning of the present year, however, an event occurred which may be taken as marking the third phase in the syphilis-parasyphilis discussion—namely, the demonstration by Noguchi of the spirochæta pallida in the brains of cases of dementia paralytica. In 1911 we pointed out that spirochæta pallida had not been demonstrated as the etiological factor in parasyphilis, because the intense staining of the nerve fibrils by Levaditi's method completely obscured the microscopic picture. This technical difficulty has now been overcome. The proceedings of the Neuropathological Section at the International Congress made it apparent that the discovery of Noguchi had come somewhat as a surprise, and had introduced a certain chaos into the views of the supporters of the "non-specific" theory of parasyphilis. In his admirable "report" on the subject Nonne makes it clear that the non-specific theory must be discarded and dementia paralytica must be described as a "spirillosis of the brain." He does not, however, look upon the lesion as a direct result of the activity of the spirochæta pallida, but rather inclines to the view that it is due to the action of toxins derived from these organisms, which have a particular affinity for certain nerve areas. Mott, however, appears to hold that the inflammatory infiltrations of dementia paralytica may be due to spirochæta pallida, but that this is not the primary lesion. The spirochæta pallida only "takes an active development when the neurons decay."

In Mott's latest view the neurons under normal conditions "are protected against reacting to poisons, because the cerebro-spinal fluid, which functions as the lymph of the brain, ... contains none of the toxic substances which may be circulating in the blood; but in parasyphilis we must suppose either that the specific organism in some form enters the central nervous system, remaining latent for a number of years, or toxins acting as sensitising agents gain access by the lymphatics ..... and stimulate the neurons to throw off side chain molecules, antibodies, the same as the rest of the cells of the body. But the neurons are perpetual elements incapable of regeneration, so that if other factors, besides the stimulating effect of the specific organism or its toxin, conspire to increase their metabolic activity, nutritional equilibrium will not be maintained and decay will set in." It is therefore clear that neither Nonne nor Mott looks upon parasyphilis as a syphilitic lesion similar to those which may be met with in the rest of the body; rather they favour the view that it is an abnormal type of lesion in which "toxins" take the chief part. Nonne considers that the intoxication of the nerve cell leads to its degeneration, while Mott supposes, as formerly, that the nerve cells are exhausted by an over-production of "antibodies," and that while in this exhausted condition the spirochæta pallida or "other causes" may determine their destruction.

A criticism of views expressed at a time when opinions are undergoing considerable modifications will have little value, and therefore we proceed to outline our concept of parasyphilis.

It is now generally recognised that an involvement of the central nervous system is of common occurrence in early syphilis, and so much is this the case that Neisser at the International Congress held that no one should be passed as cured of syphilis until the cerebro-spinal fluid had been reduced to a fully "normal" condition. Clinically the "involvement" may be recognised by a series of symptoms ranging from a mere headache to a complete mental disability and death. We imagine that the "headache" is an index of meningitis, usually, no doubt, trivial, but nevertheless definite. In more pronounced cases the process may involve not only the perivascular lymphatics of the pia but also the perivascular sheaths of the vessels entering the cerebral substance. The spirochæta pallida will be numerous in such lesions. As in the other forms of syphilis, the spirochætæ will tend to leave the neighbourhood of the vessels and to invade the surrounding tissues, in this case the brain tissue proper, and in such a manner will occur a subacute or acute encephalitis. If such an acute lesion is rapidly subjected to intensive antisyphilitic treatment the great majority of the spirochætæ will be destroyed and the patient will recover without residual signs. If not he will become mentally deranged and eventually die. These lesions we imagine as occurring in the secondary period, and it will readily be allowed that a small number of spirochætæ may survive and lie dormant during the latent period either in the lymph vascular tissues or in the brain substance proper. If now we proceed to investigate the state of affairs at a later date in the tertiary period we find, as we shall show later *in extenso*, that all the tissues of the body which have been under the influence of the spirochæta in the secondary period are in a state of "hyperallergie" (von Pirquet). They have undergone an invisible change as a result of an immunity process and are hyperimmune to the action of the sensitising virus. This hyperimmunity is of such a type that the cell will detect and react to a much smaller quantity of virus than was the case in the secondary period; and further, this reaction will be of an abnormally violent type designed as a protective mechanism, but resulting in the case of delicate tissues in destruction. The cell receptors are so "avid" that the virus effects an abnormally strong intoxication. This is the explanation of such destructive lesions as the gumma in which the number of spirochætæ is extremely small. The gumma is, however, a purely lymph vascular lesion, and is due to a focal reaction about a nidus of spirochætæ which has remained dormant in this position. On the other hand, the gummatous process may be more diffuse, in which case a number of focal reactions will occur. Finally, the lesion may be so diffuse that the focal perivascular nature may be little evident. If such a process occurs in an organ the incidence of the intoxication will also fall largely upon the parenchymatous cells and induce in them an excessive destruction (diffuse orchitis).

From the above account it is clear that "cerebro-spinal syphilis" is due to a reaction in the altered lymph-vascular tissues of the meninges and vessels, and since it is thus focal the brain substance will be little involved. If, however, an exacerbation occurs in a nidus of spirochætæ which has been left latent in the nerve tissues from a previous encephalitis, an excessive reaction will follow in these tissues, and will lead to degeneration of the nerve cells (parasyphilis).

Thus in our view cerebro-spinal syphilis is due to a tertiary hyperallergic reaction in the vascular tissues, while parasyphilis is due to a tertiary hyperallergic reaction in the nerve tissues and accompanying interstitial tissues (neuroglia). The infiltrations about the vessels do not suggest the presence of the virus therein, but represent an effort on the part of the wandering cells to reach the neighbourhood of the lesion in order to produce a "gumma." They are prevented from gaining this position by the adventitial sheath which surrounds the vessels.

According to this view there is no essential difference between the lesions of encephalitis of the secondary period

and encephalitis of the tertiary (dementia paralytica) except in the greater susceptibility of the tissues in the latter. Thus a particularly toxic secondary encephalitis might simulate the clinical symptoms or even the pathological appearance of dementia paralytica. In this connexion we would point out that in certain of the cases of "general paralysis" in which the spirochæta pallida has been demonstrated neither the clinical sequences nor the microscopic lesions have been entirely typical. In particular we may mention one of the cases of Levaditi, Marie, and Bankowski in which the symptoms so far as they are mentioned and the lesions are more reminiscent of acute encephalitis than dementia paralytica, the spirochætæ being particularly related in large numbers to the blood-vessels. In one illustration, indeed, a spirochæta is shown free in the lumen of the vessel. To our mind this case resembles one described by Marinesco and Minea as "paralysis with meningitis," and which was not included as typical dementia paralytica by the authors. We would suggest that if spirochæta pallida is present in such numbers and also lying in the blood-vessels, there is no reason why they should not have been discovered long ago. In the original accounts and in the specimen sent by Noguchi to Professor Bulloch which we have examined the organisms are extremely sparse and bear no relation to the blood-vessels. Thus it is probable that several of these cases should be classed as acute or subacute encephalitis—that is, an inflammation of unsensitised tissues occurring early in the disease—while dementia paralytica proper should be confined to the lesion of late onset occurring in hypersensitive tissues and due to a small number of organisms. The pathological distinction is not absolute, but from a practical point of view the former are much more open to clinical cure than the latter. We look upon the case of classical dementia paralytica as incurable because the earliest intoxication of the nerves is sufficiently grave to insure their degeneration. In these patients the degeneration is vital owing to its anatomical situation. The case of "acute general paralysis" or "secondary encephalitis" will, on the contrary, react to treatment to a variable degree, for although the number of spirochætæ is large, the tissues are not hypersensitive; on the contrary, the general susceptibility of the secondary period is abnormally low (Anergie). Thus a marked inflammatory disturbance may occur without a grave lesion of the nerves in the early stages. Such patients, however, if left untreated, as may be the case if the state is not recognised, will develop all the mental disabilities of the case of dementia paralytica and will pass to the asylum and die.

So far as concerns tabes dorsalis, the lesion may be looked upon as essentially the same as in dementia paralytica. Nevertheless, it is necessary to account for the striking anatomical distribution of the lesion, and this has already been arrived at by the elaborate researches of Orr and Rows. They have shown that toxins experimentally introduced into the sheaths of the peripheral nerves will produce "tabetic" lesions in the cord and have also detected such lesions in patients suffering from chronic skin conditions. They have thus concluded that tabes dorsalis is a chronic inflammation of lymphogenous origin. Our view utilises the work of Orr and Rows in that we assume that the "sensitising myelitis" ascends by the lymphatic path which they have described to the posterior columns. Here we assume that the spirochætæ remain dormant, and at a later date when the tissues have become hyperimmune an exacerbation will produce an excessive response. The various peculiarities in the pathological anatomy of tabes dorsalis appear to have been satisfactorily elucidated by Orr and Rows.

To sum up our concept of syphilis of the central nervous system, we hold that it consists of two main divisions—one largely or entirely confined to the lymph vascular tissues and the other largely or entirely confined to the brain substance. In each of these two divisions varying numbers of spirochætæ and, even more so, varying sensitisation of the tissues will occasion lesions of varying clinical importance. In the vascular tissues these will range from a slight meningitis to a gummatous process, while in the brain from a slight meningoencephalitis to tertiary encephalitis (dementia paralytica). It will be admitted that these views are to some extent hypothetical, and are not founded upon a large pathological anatomical experience. This result is, however, due to the fact that the cases now recognised as encephalitis (Wassermann reaction and discovery of the spirochætæ) were formerly not recognised as syphilitic. The "cerebral syphilis" of the literature is practically confined to the gummatous processes. Further, since the patients are susceptible to treatment, a post-mortem examination is a rare occurrence. It is, nevertheless, certain from the rich clinical material and wide experience of Dr. Head and Dr. Fearnsides that the various syphilitic states we have referred to are common.

We wish to point out that in the construction of these views we have been much indebted to a close collaboration with Dr. Head and Dr. Fearnsides, with whom we published a preliminary paper in *Brain*.[2] Finally, we have been influenced throughout by the criticisms of our chief, Professor William Bulloch.

RADIUM RAYS IN THE TREATMENT OF HYPERSECRETION OF THE THYROID GLAND.[3]

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MANY favourable reports as to the action of the X rays in Graves's disease have been published. The method of treatment has, in fact, become orthodox. Dr. George R. Murray, in his Address in Medicine to the British Medical Association meeting at Brighton, referred to the use of the X rays as follows: "The application of suitable doses of X rays to the enlarged thyroid gland has in some of my cases proved to be of great value. The gland gradually diminishes in size and the other symptoms subside. Atrophic changes in the secretory epithelium and both interstitial and extracapsular fibrosis appear to be induced by the action of the rays. In two of my cases in which X ray treatment was not successful one lobe of the gland was excised. Microscopical examination showed no fresh change in one, but a distinct increase in the interalveolar connective tissue of the other. These changes are slow in development, so that the full effect of the treatment is not obtained until some months have elapsed. In favourable cases some 15 to 20 weekly doses of the rays have been sufficient to bring about great improvement or practical recovery, but in others only slight improvement has followed a similar course of treatment. It is worth while to persevere with X ray treatment for as long as a year, if slow but satisfactory progress is being made. We have, however, still much to learn as to the most appropriate doses and mode of application of this valuable method of treatment."[4] In my opinion, which is based not only theoretically upon the similarity of physical radiations, but also practically upon an experience of four clinical cases, these laudatory remarks as to the action of X rays could quite as justly be applied to the action of radium. But in addition radium has two distinct clinical advantages over the X rays: (1) a perfectly definite dose of it can be given and repeated as often as may be desired; and (2) the radium can be applied without noise or excitement while the patient is in bed. That this is an important advantage in the treatment of this disease every physician will allow. It was for the latter reason that I was led to replace the X rays by radium rays in the treatment of the following case.

CASE 1.—The patient, aged 69, the wife of a physician, had suffered from Graves's disease for two years. Her chief symptoms were tachycardia (up to and above 170), nervousness, weakness, exophthalmos, and breathlessness. The thyroid was scarcely enlarged. In December, 1912, I was consulted as to the application of the X rays. Only one application was, however, given, for the excitement and fatigue of having to come to my house for the application, combined with the noise and spluttering of the X ray apparatus, appeared likely, in the patient's nervous condition, to do more harm than good. It then occurred to me to suggest the employment of radium instead of the X rays. I was unaware of any previous use of radium for this condition, but it seemed reasonable to suppose that owing to its

[2] Brain, 1913, vol. xxxvi., p. 1.

[3] A paper read before the Section of Physiology at the British Association for the Advancement of Science on Sept. 15th, 1913.

[4] THE LANCET, July 26th, 1913, p. 202.

action in diminishing vascularity (as in nævi) by the obliteration of various small blood-vessels and by the induction of fibrosis some benefit would accrue.

After consultation with the patient's medical adviser and with her husband, applications of radium were made over the thyroid on each side of the neck. To begin with, an intensive form of treatment was adopted, several applications of 45 mg. hours screened by silver being given in the first ten days; afterwards the applications were given at greater intervals; altogether the patient received in the course of two or three months a dose of 350 mg. hours. Improvement began very quickly, and has been maintained; the patient's medical attendant and her husband agree as to the benefit she has received. "The exophthalmos is less, the tachycardia is less frequent and marked, the pulse used to go to above 170, now it keeps at about 80, and if it goes above 100 we think it abnormal; the patient is stronger and less nervous, and the respiration is normal." This result was sufficiently encouraging to induce the author to employ the same treatment in other cases.

CASE 2.—A female, aged 25, had suffered from Graves's disease for four years. She complained of nervousness, palpitation, and weakness; right exophthalmos was marked. Treatment was begun on Dec. 18th, 1912, by two applications weekly of the X rays. On Jan. 16th, 1913, the X rays were replaced by radium screened on all but one occasion by silver, half a millimetre thick. By the beginning of May a dose of 205 mg. hours had been given. The patient's medical attendant said in July, 1913, that she was much improved, especially in the exophthalmos.

CASE 3.—A female, aged 50, ill for more than seven years with Graves's disease. Exophthalmos was marked; she complained principally of being awakened at night by attacks of breathlessness. She could not walk at all for the same reason. Her thyroid was enlarged. Radium treatment was begun in July, 1913, as a rule screened by silver. In one month's time she had received 350 mg. hours. In six weeks' time the patient showed considerable improvement; she could walk slowly for some distance (down to the shore and back, a distance of a mile altogether), whereas she had previously been confined to bed, but her principal relief was that she had quite lost the distressing night attacks of breathlessness.

CASE 4.—A male, aged 53; duration of Graves's disease four years with intermissions. The patient was very ill with a weak, irregular heart, dropsy of the legs, marked exophthalmos, and enlargement of the thyroid. He was put on digitalis and given a dose of 180 mg. hours of radium in one week. This was in August, 1913. After the treatment the patient went into the country, but is being kept under observation. His son wrote recently to say that the patient was improving. The thyroid is much diminished in size.

So much for the clinical evidence at my disposal. The case would be more complete if sections of a thyroid which had been exposed to radium rays could be examined, as has been done by Dr. Murray in the case of the X rays. But there is plenty of evidence available as regards its general action on normal and pathological tissues. Thus in nævi the effect is to obliterate the small blood-vessels, and in malignant growths to induce a fibrosis. Professor Oscar Hertwig, of Berlin, in a paper contributed to the recent International Congress of Medicine, said that radioactive bodies had a powerful influence on vital processes in plants and animals. The theory at first held that lecithin was the body acted on had been given up, and the microscope had shown that it was the nuclear substance that reacted to the rays. In experiments on rana fusca it was found that if the spermatozoa were acted on by small doses of rays, though they did not show any perceptible alteration in structure, yet when they impregnated the ova they caused an alteration in the development of the ova so as to produce monsters, which he termed "radium larvæ." This effect was produced by the rays acting on the nuclear substance of the head of the sperm cell. Many experiments with radium on different tissues showed that while full grown and differentiated cells and tissues were comparatively little affected, on the contrary, embryonic cells and others which in adults lingered in an undifferentiated state, especially generative cells, young nerve cells, leucocytes and tumour cells in a state of growth, were especially sensitive. Blood and lymph of man, and the hæmatopoietic organs connected with them, were especially altered by radioactive bodies. Microscopically a great diminution in the white corpuscles was observed, caused on the one hand by wholesale disintegration, and on the other by diminution in replenishment.

With regard to the effect on the nervous tissue, Sir Victor Horsley and Dr. N. S. Finzi carried out a research into the action of filtered radium rays on the brain (British Medical Association Meeting, July, 1911). Histologically the meninges were infiltrated with blood, and the blood-vessels showed such proliferation of their endothelium that in some cases they were practically occluded. There was also a considerable formation of fibrous tissue, which extended into the cortex and along the sulci. Further, there occurred wedge-shaped thrombotic areas in the cortex. The only microscopical change discovered in the nerve-cells apart from these thrombotic areas was a condition of hyperchromatosis in the cells of the region of the cortex in which the hæmorrhages had occurred. Examined by the Marchi method there was some degeneration of the pyramidal fibres as well as of some fibres in the brain proceeding from the hæmorrhagic area. It appears, then, that the most constant histological changes found in nervous tissue after the application of sufficient doses of radium are vascular ones. It is probable, then, that the effect of radium rays on the thyroid gland is to diminish the vascularity of the gland, to cause a diminution in the leucocytes, and an over-growth in the connective tissue. By these processes the functional activity is lessened, the hypersecretion checked, and the morbid phenomena consequent thereon diminished.

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THE TREATMENT OF UMBILICAL HERNIA IN CHILDREN BY THE SUBCUTANEOUS ELASTIC LIGATURE.

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THERE are certain well-recognised methods of dealing with the small umbilical protrusion so common in infants. It is correctly taught that the condition is one with a strong natural tendency towards spontaneous cure, and the simple mechanical aids of a pad or inversion of the abdominal wall over the umbilicus are employed to hasten the closure of the sac. While this line of treatment is often satisfactory and in its simplicity has much to recommend it, yet there are at least two disadvantages from which it suffers. The first disadvantage depends upon the degree of uncertainty which surrounds the prospect of an early cure when a pad or skin inversion is used; the case must be watched most thoroughly and conscientiously—some carelessness and a single protrusion of the sac will undo the benefit of months of treatment. The second disadvantage consists in the duration of time during which retention treatment is required; at least six months are necessary, more often it is one year and sometimes two. To parents and patients alike such prolonged treatment becomes intolerably irksome.

Considerations such as these led me to debate the possibility of employing some method which was free from these disadvantages. Last year Brun[1] published a paper in which he drew attention to the advantages of the elastic ligature in the treatment of umbilical hernia in children. It is this method somewhat modified which I have employed and found so useful.

Suitable cases.—The operation is not performed upon children below the age of 6 months, and in the majority of cases it is of advantage to wait until the child is 1 year old. During the pre-operation period the application of a pad or of inversion may be practised, and if cure results without operation so much the better. The size of the opening in the abdominal wall is considered in judging the suitability of the case. A large opening is unsuitable for operation by this method, as there is later a tendency to recurrence. The rough guide which one uses is the tip of the little finger—an opening which is large enough to admit this is considered unsuitable. It is essential that the sac be empty; irreducible contents of any description whatsoever must be

1 Brun, V., Archives de Méd. des Enf., Paris, September, 1912.

looked upon as an absolute contra-indication to the operation. As long as the opening in the parietes is suitable the size of the sac need not be taken into consideration.

The operation.—The method has been practised upon 21 patients. The procedure does not occupy more than a couple of minutes in the accomplishment and the after-treatment is of the most simple description. The preliminary treatment consists in a thorough evacuation of the bowels and the reduction of flatulence by suitable dietary before operation. A few simple instruments are required in the shape of a knife, dissecting forceps, and a blunt dissector. The essential material is a piece of elastic cord one-eighth of an inch in diameter and about 3 inches long. The actual technique of the operation is as follows: The skin over the fundus of the protrusion is grasped with a pair of dissecting forceps, and skin and sac are pulled gently upwards from the abdominal wall. Great care is exercised in ascertaining that the contents of the sac are completely reduced. Three small incisions are made at equal intervals around the periphery of the sac, at the point where the skin is reflected on to the abdominal wall. (Fig. 1.) These incisions penetrate the

FIG. 1.

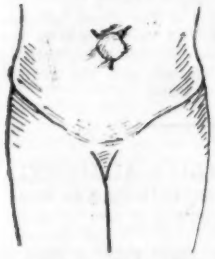

FIG. 2.

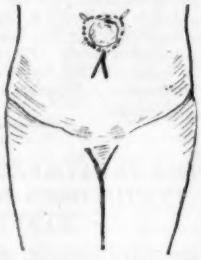

FIG. 1.—Showing radiating skin incisions round the hernia.
FIG. 2.—Second stage of the operation. The elastic ligature is lying in position. In practice it lies more closely round the pedicle of the sac.

skin and subcutaneous tissues, but they must not injure the sac. With a blunt dissector it is now possible to undermine the tissues around the pedicle of the sac—the three radiatory incisions facilitate the performance of this. The elastic ligature is now pulled beneath the skin, following the track of separation. (Fig. 2) This is most conveniently done by means of an artery forceps, which pulls the ligature from one incision to another around the periphery. When the ligature is in position the operator, having satisfied himself that the sac is empty, pulls the ligature as tightly as possible around the pedicle of the sac and fastens it so with a stout piece of silk. The ends of the elastic ligature are left protruding through one of the incisions, and they are cut to a convenient length; a simple dressing is applied and kept in position by means of a band of adhesive plaster.

After-treatment.—The ligature is allowed to remain in position for six days and then removed by cutting the silk knot. The opening which it leaves quickly closes. This early removal of the ligature differs from the method employed by Nota, of Turin, as described by Brun. Nota does not remove the ligature but allows it to slough out, which it does usually about the twelfth day. An early removal is to be preferred; it does in no way jeopardise the ultimate result, and it is a much more aseptic proceeding. A dressing is worn until the wounds are healed. No further application is made.

Result.—One can only say that the results have been uniformly successful. The first case operated on was one which demonstrated the permanency of the cure. About two days after operation the child developed whooping-cough, but in spite of persistent coughing and straining there was no recurrence of the protrusion.

Advantages of the operation.—These may be summarised as follows. 1. The operation is essentially of the most simple type. 2. The after-treatment is brief and satisfactory. 3. The cure is apparently a permanent one.

Edinburgh.

UNIVERSITY OF LEEDS.—The address at the opening of the next session of the School of Medicine will be given on Oct. 1st by Professor C. S. Sherrington.

A NOTE ON HELMINTHIASIS IN BASSA PROVINCE, NORTHERN NIGERIA.

BY J. E. L. JOHNSTON, M.B., B.S. LOND., D.T.M. & H. CANTAB.,
WEST AFRICAN MEDICAL STAFF.

BASSA Province is situated in the south-east corner of Northern Nigeria, bordering on Southern Nigeria to the south, bounded on the west by the river Niger, on the north by the river Benue, and on the east by Muri Province. Almost the whole province is characterised by extremely thick *kurimi*, or bush, in many places so dense as to be practically impenetrable, and it is intersected by several small rivers and streams, the most important being the Amara, the Uge, the Urito, the Okura, and the Mabolo. The resulting climate is therefore, on the whole, damp and equable. For 1909 and 1910 the maximum relative humidity was 85 and 86 respectively, the minimum 67 and 64; during the early part of this year—when the following observations were made—the rainfall was much below the average, and the relative humidity fell on one occasion to 18. The mean maximum temperature for the year is as a rule about 90° F., the mean minimum about 63°.

The people.—The natives consist mainly of pagan tribes, Igarras, Ndomas, and Bassa Comos, but there are several smaller tribes and some isolated communities of Mohamedan Hausas from the north. Ankpa, the chief European station, is in the midst of the Igarras. While I was stationed in the province some few of the prisoners exhibited symptoms of anæmia and debility, associated in some cases with œdema of the feet and legs, and even ascites, and with indefinable

TABLE I.—*Showing the Ova found in 30 Cases.*

No.	Tribe.	Ova found.	Remarks.
1	Bassenge.	*Nil.*	—
2	,,	Ankylostomum.	Health good.
3	Igarra.	*Nil.*	—
4	,,	Trichuris trichiura.	—
5	,,	Ankylostomum; ascaris.	Health good.
6	,,	*Nil.*	—
7	,,	,,	—
8	,,	Ankylostomum; ascaris.	Had a slight attack of amœbic dysentery; health otherwise good.
9	,,	Ankylostomum; ascaris.	"Craw-craw." General health good.
10	,,	*Nil.*	—
11	,,	,,	—
12	,,	,,	—
13	,,	,,	—
14	,,	Ankylostomum.	Health good.
15	,,	,,	Health fair.
16	Okpoto	,,	Œdema of feet and legs.
17	,,	Tænia solium.	—
18	,,	Ankylostomum.	Pains in legs, œdema, and hyperæsthesia over tibiæ.
19	,,	Ankylostomum; ascaris; trichuris trichiura.	Intense œdema, ascites, cardiac failure, death.
20	,,	Ankylostomum.	Health fair, but some slight œdema of feet.
21	Agatu.	*Nil.*	—
22	,,	,,	—
23	Yoruba.	Ankylostomum; ascaris.	"Craw-craw." Œdema of feet and legs.
24	,,	Tænia solium.	—
25	Hausa.	Tænia solium; ankylostomum.	Health good.
26	,,	Trichuris trichiura.	—
27	,,	Ankylostomum.	Health good.
28	Feri-beri.	Tænia solium; ascaris.	—
29	Kakanda.	Ankylostomum.	Health good.
30	Bagarini.	*Nil.*	—

pains in the joints and down the legs, and occasionally hyperæsthesia over the tibiæ. The signs in one or two cases seemed to point to beri-beri, in others to ankylostomiasis. However, the majority of the prisoners appeared to be in good health.

The stools.—I was led to examine the stools for helminthic infection, which I did in 30 cases taken at random (Table I.).

TABLE II.—*Showing Results of Examination of the Blood.*

Number.	Polymorphonuclears.	Eosinophiles.	Large mononuclears.	Small mononuclears.	Mast cells.	Myelocytes.	Hæmoglobin.
2	24	36	4	36	—	—	60
3	51	16	6	27	—	—	60
4	57	4	1	38	—	—	50
5	58	18	3	21	—	—	50
6	54	9	6	30	1	—	70
7	22	42	6	30	—	—	60
8	32	35	5	28	—	—	60
9	57	11	15	16	—	1	60
10	31	40	7	22	—	—	65
11	28	56	3	13	—	—	60
12	42	30	1	27	—	—	70
13	36	16	20	26	—	2	80
14	62	6	7	25	—	—	60
16	74	3	4	19	—	—	40
17	43	28	7	22	—	—	70
18	60	3	3	34	—	—	60
21	46	12	6	34	2	—	60
22	64	5	3	28	—	—	60
23	47	19	6	27	—	1	60
24	28	21	3	48	—	—	55
25	57	16	7	18	2	—	60
26	29	17	12	42	—	—	—
27	30	30	10	28	1	1	70
28	26	34	4	36	—	—	50
29	44	15	11	28	2	—	60
30	35	29	6	30	—	—	70

In these 30 cases I found :—

Single infection in 12, 40%
Double ,, ,, 6, 20%
Triple infection in 1, 3·3%
No infection ,, 11, 36·6%

The ova found were as follows :—

Ankylostome (or necator) in 14, 46·6%
Ascaris lumbricoides ,, 6, 20%
Tænia solium in 4, 13·3%
Trichuris trichiura in 3, 10%

Examination after the administration of anthelmintics proved the presence of both ankylostome and necator. Table I. shows the results in more detail.

The blood.—I then proceeded to examine the blood of the same cases, except of four who were not available. The most noticeable feature was eosinophilia, which was present in almost every case (see Table II.), rising in one case as high as 56 per cent. This was seen not only in cases with ankylostome infection, but with other helminths, T. solium, ascaris, T. trichiura.

In some cases I believe it was due to skin diseases, probably parasitic, collectively termed "craw-craw" by the patients. These lesions usually commence as exceedingly irritable papular eruptions, beginning on the thighs or scrotum, sometimes on the arms, often becoming pustular from scratching, and often spreading on to the trunk. Wyler [1] suggests that the eruption on the thighs and buttocks is really the seat of infection with ankylostomes, owing to the native habit of squatting on the ground.

In other cases the eosinophilia had no obvious cause, but I believe further search in the stools might have shown ova. Many cases showed great relative increase in the lymphocytes, possibly attributable to a preceding infection with malaria. Two cases showed malarial parasites, and two showed microfilariae—one M. bancrofti, the other loa loa and M. perstans.

A rough hæmoglobin estimation showed the following results (see Table II.):—

1 had 40% hæmoglobin.
3 ,, 50% ,,
1 ,, 55% ,,
13 ,, 60% ,,
1 had 65% hæmoglobin.
5 ,, 70% ,,
1 ,, 80% ,,

The case showing only 40 per cent. had a large abscess in addition to ankylostome infection.

Treatment.—The treatment first adopted was 6 drachms of the eucalyptus, castor oil, and chloroform mixture in the early morning, repeated after an hour and a half, the double dose being again given three days later. This seemed quite inefficient, and better results attended the administration of thymol in divided doses. As I was shortly afterwards transferred from the station I was unable to observe the effects of treatment on the general health of the patients.

Remarks.—The above observations, though limited to 30 cases, would serve to show the extreme prevalence of infection with ankylostomes amongst the Bassa pagans. The Hausas seemed to me to be much less affected, though this could not be observed amongst the prisoners, of whom very few were Hausas. One reason for their comparative immunity appears to be their use of deep cement-lined pits for defæcation, whereas the pagan tribes make use of the nearest convenient spot in the bush, thus providing the ankylostome ovum with its most favourable conditions for development.

Ankylostomiasis probably has a distinct bearing on the fact that Hausa carriers are able to carry heavier loads for far greater distances than can pagans. A remarkable point was the absence of symptoms in many cases that showed infection and even considerable anæmia. The men were able to do their ordinary work, which was certainly not as a rule heavy, without complaining even of shortness of breath; in other words, infection with ankylostomes is not synonymous with ankylostomiasis.

Conran [2] states that all his cases complained first of epigastric pain, but this was uncommon in my series; the earliest symptoms seemed to be dyspnœa and dizziness, especially in a bright light, and these were followed by pains in the legs, œdema, and the ordinary symptoms of ankylostomiasis. Several of these cases were extremely like cases of beri-beri, and in some of these ankylostome ova were not found till the second or even third examination, and after the administration of a mild purge. The diagnosis between these two diseases, usually said to be easy, may in actual practice be a matter of considerable difficulty.

The Medical Research Institute, Lagos, Southern Nigeria.

[1] Some Observations on Ankylostoma Infection in the Udi District of the Central Province, Southern Nigeria, by E. J. Wyler, Journal of Tropical Medicine and Hygiene, July 1st, 1913.

[2] A Report on Ankylostomiasis in the North Nyasa District, by P. C. Conran, Journal of Tropical Medicine and Hygiene, July 1st, 1913.

SUPPURATING ENDOTHELIOMA OF MECKEL'S DIVERTICULUM SIMULATING APPENDICITIS.

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MECKEL'S diverticulum is very rarely found in mammals with the exception of man, but is constantly represented in certain birds. The London museums contain about 100 specimens from the human species, half of which were obtained from post-mortem examinations; about one-third had caused obstruction during life; a few had caused intussusception; and only three were the seat of inflammation.

Very few cases of inflammation of Meckel's diverticulum are to be found in literature; those simulating appendicitis could be counted on the fingers of one hand; and the presence of a suppurating tumour resembling an abscess of the appendix seems to be unique. In other cases in which there has been inflammation this has been usually due to torsion, perforation, or the presence of foreign bodies.

A woman, aged 38, was admitted under my care in 1910 for supposed appendicitis. Following weakness of a few weeks' duration she had sudden sharp pain in the right

abdomen two days before admission, with cold shivers. There had been some indefinite trouble with the bowels about 12 years before. On admission her temperature was 101° F. and the pulse 120; the abdomen was distended and very tender on the right side, where a soft swelling could be felt. Operation was as follows. A median incision was made. Free fluid was present in the peritoneum, serous generally, but puriform in the right loin. The bowel was then examined and a gangrenous broken-down mass was found, originating in a Meckel's diverticulum, and necessitating the resection of 15 inches of the small intestine. The appendix was normal. The patient remains well.

The specimen (see figure) is preserved in the museum of the Bristol Royal Infirmary, and Professor I. Walker Hall gave

The abdomen contained free fluid, with localised stinking pus in the right loin. The appendix was normal. The omentum formed a hood adherent over the mass, and is represented as having been partly cut away to show the structures beneath it. (Surgical Specimen No. 522, Museum, Bristol Royal Infirmary.)

the following microscopical report which he has subsequently confirmed: "Sections taken from separate parts of the tumour show masses of endothelioid cells and dilated blood sinuses, adult in type. The lesion is therefore a hæmendothelioma."

Although the instances are so few in which inflammation of Meckel's diverticulum may simulate appendicitis, yet this should be borne in mind; and it may be of interest to append references to such recorded cases, grouping them together.

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3. *Concretions, seeds, &c.*—Holländer: Gangränöses Meckel'sches Divertikel mit Gallensteinen gefüllt; Perforation; Resektion, Berliner Klinische Wochenschrift, 1906, Band xliii., p. 990. Woolsey: Meckel's Diverticulum filled with Seeds, Annals of Surgery, Philadelphia, 1906, vol. xliii., p. 764. Aschan: A case of Meckel's Diverticulum Perforated by a Foreign Body, Finska Läk. Sällsk. Handl., Helsingfors, 1909, li., 118. Sherren: Meckel's Diverticulum containing Calculi, Proceedings of the Royal Society of Medicine, London, 1909–10, vol. iii., Clinical Section, pp. 11–15. Magaigne et Blanc (Fish-bone): Bulletin et Mémoires de la Société d'Anatomie de Paris, tome vi., May, 1899. Beale: Transactions of the Pathological Society of London, 1850–52, vol. iii., p. 366. Forgue et Riche: Le Diverticule de Meckel, Paris, 1907, 188. Znojemsky: Zentralblatt für Chirurgie, Leipzig, 1907, Band xxxiv., p. 1107.

4. *Perforation.*—Von Khautz: Gasphlegmone nach Perforation eines Meckelschen Divertikels, Wiener Klinische Wochenschrift, 1906, Band xix., p. 440. Simon: Perforation eines Meckelschen Divertikels, Medicinische Klinik, Berlin, 1908, Band iv., p. 1345. Lampe: Ueber einen Fall von Spontan-Perforation eines Meckel'schen Divertikels, Leipzig, 1909 (E. Lehmann). Turner: Perforated Meckel's Diverticulum, Northumberland and Durham Medical Journal, 1909, vol. xvii., p. 117.

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6. *Ante-partum volvulus.*—Carwardine: Brit. Med. Jour., 1897, vol. ii., p. 1637.

Clifton, Bristol.

INDICATIONS FOR OPERATION ON CEREBRAL TUMOUR FROM THE POINT OF VIEW OF THE OPHTHALMIC SURGEON.[1]

BY LESLIE PATON, B.A., M.B., B.C. CAMB., F.R.C.S. ENG.,

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I FEEL that my intrusion in the discussion on indications for operation in cerebral tumours demands some apology, but there are one or two aspects of it where the opinion of the ophthalmic surgeon may become requisite, and with those alone I shall deal as briefly as possible. His opinion may be asked firstly as to whether operation is necessary in a particular case to prevent loss of sight, or whether operation will be of any avail in procuring any recovery when vision has already failed or begun to fail. If the tumour can be definitely localised, the sooner operation, either palliative or radical, is done the better, not only for the sight but also for the life of the patient. But if the position of the tumour has not been determined, and if marked papillœdema is present, it becomes the duty of the ophthalmic surgeon to give his opinion as to whether a palliative operation must be performed to save sight, and, if so, when it must be performed. In other words, he must be prepared to say what delay may be allowed in the hope of definite localising signs manifesting themselves without serious risk to the sight of the patient. In attempting to give an answer to this question I must briefly refer to some of the pathological features of tumour papillœdema.

In the early stages of tumour development, if the tumour itself is not directly pressing on the chiasma or on one or other of the optic nerves, the increased pressure in the chiasmal neighbourhood is probably mainly a fluid pressure; at any rate, it is not sufficient to interfere with the normal conduction of nerve impulses from the retina, except possibly in a temporary way. We do get fleeting attacks of blurred vision or possibly, according to Cushing and Bordley, temporary dyschromatopsia, but there is no definite diminution of visual acuity and no obvious loss of peripheral field. In the optic disc at this stage the principal changes seen are due to the œdematous fluid filling up and squeezing apart the meshwork formed by the interlacing of the nerve fibres and the fibres of the pars choroidalis of the lamina cribrosa. There is as yet no degeneration of the nerve fibres and no increase in the connective tissue elements in the disc. If at any time while this stage persists intracranial tension be restored to the normal level, there will be a restoration to the normal condition of all these affected tissues, and no trace may be left to show that they have ever been affected. Even where the œdema has been so great as to overflow the disc neighbourhood and run along the fibres of the papillo-macular bundle and give rise to a macular fan, complete restoration of normal appearances may take place on relief of pressure, and I have seen such cases 12 months after operation in which it was almost impossible for any candid observer to say that there had ever been optic neuritis.

[1] A paper read at a combined meeting of the Sections of Neurology and Surgery at the International Congress of Medicine, London, 1913.

In the next stage, however, changes commence which do not allow of such complete recovery. First, as regards the intracranial portion of the optic nerves and the chiasma, the fluid pressure becomes replaced by a more solid pressure. We know that as the tumour develops the convolutions become flattened, the medulla is forced down into the foramen magnum as a pressure cone, and similarly the frontal lobes and temporo-sphenoidal lobes are forced on to the optic nerve, and, as Behr and Saenger have shown, the dural fold that overlaps the optic nerve may actually leave its impress on its surface. At the same time the distended floor of the third ventricle may be pressing down on to the chiasma. If this more solid type of pressure is prolonged or if the tumour itself grows so as to press directly on the optic nerve, then the papillœdema may subside and a descending or pressure atrophy take its place, and so you may get the seeming contradiction of a descending atrophy appearing in a disc which has been definitely affected by optic neuritis. And it is a point worthy of consideration whether the early onset of optic atrophy in cerebellar tumours is not in many cases brought about in this way.

When we turn to the disc itself we find that if the œdema persists secondary changes inevitably follow. The stretched nerve fibres, distorted and forced out of their usual course and bathed in œdematous fluid, begin to show moniliform swellings, and here and there these swellings increase and the constituent fibrillæ break up and cytoid bodies are formed which ultimately undergo further disintegration. The neuroglial cells at the crest of the swelling begin to proliferate, and if these degenerative and proliferative processes are allowed to proceed no subsequent relief of pressure will benefit vision. Indeed, in these cases the visual failure may progress even after pressure is relieved, for the subsequent cicatricial contraction of the newly formed neuroglial tissue causes a further atrophy of any nerve tissue that is still functional at the time of operation. The visual loss that is due to direct pressure on the nerves intracranially may be recovered from if operation is undertaken before much pressure atrophy has developed. Visual loss that is due to degenerative changes in the disc itself may, and probably will, be progressive even after operation. So long only as the papillœdema remains in the first stage without evidence of visual loss and without evidence of secondary disc changes is it justifiable to delay palliative operation.

The second point to which I wish to refer briefly is whether in the present state of our knowledge we can place any reliance on a difference in the amount of papillœdema in the two eyes as a valuable factor in the localisation of the tumour. I hold very strongly the opinion that we cannot do so. My own published statistics are based on 102 cases where the position of the tumour had been definitely ascertained by operation or necropsy, and where there were no signs of atrophy or subsidence in either disc. In 54 of these cases the swelling was either equal or the difference did not amount to more than 0·5 D. In 25 the swelling was greatest in the eye on the side of the tumour, and in 23 it was greatest in the eye of the opposite side. Time will not permit me to go into further details about these cases which have already been published. I hope in the course of a few months to be able to give detailed statistics of another large series of cases which I have seen since the last set was published.

At the Heidelberg Congress last year Uhthoff gave the following statistics based on a summation of his own cases and cases collected from the literature. In the case of supratentorial tumours he found that one-sided choked disc occurred in 56 per cent. of cases on the side of the tumour, and in 44 per cent. of cases on the opposite side If the disc changes were not marked enough to be called "choked disc"—i.e., less than 2 D. of swelling—the proportion was more in favour of the side of the tumour, 75 per cent., and 25 per cent. on the opposite side. When there was choked disc on both sides, but more marked on one side than the other, it was in 73 per cent. greater on the side of the tumour, and in 27 per cent. greater on the opposite side. When there was optic atrophy on one side and papillœdema on the other side the tumour was invariably on the atrophic side. When the papillœdema took on a hæmorrhagic character it was as often more marked on the contralateral side as on the same side. As regards cerebellar tumours, he points out that one-sided optic neuritis is very rare. When it occurs "die Geschwulst ist ebenso oft auf der gleichen als auf der entgegengesetztem Seite."

I cannot refrain from quoting here the words Professor Rothmann used in his contribution to the discussion on cerebellar tumours: "Absolut trügerisch und irre führend ist die frühere Auftretung und die stärkere Entwickelung der Neuritis optica auf einer Seite; oft genug kommt sie zuerst auf der der Kleinhirn-Affektion gegenüber liegenden Seite zur Beobachtung." "The earlier appearance or stronger development of optic neuritis on one side is an absolutely deceitful and misleading sign. Frequently it is first seen in the opposite eye from the affected side of the cerebellum." Now I would extend this dictum to intracranial tumours generally, and say that in too many cases is it seen that the papillœdema either first shows itself or is more strongly marked in the contralateral eye for us to use this as a valuable localising sign. The appearance of descending atrophy in one eye and optic neuritis in the other is a sign of very great value, and indicates that the tumour is on the atrophy side pressing directly on the nerve. But until we have more knowledge than we have at present any difference in the amount of swelling or the appearance of the two discs will too often prove a misleading sign.

Harley-street, W.

AN UNUSUAL CASE OF CEREBRAL ABSCESS.

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THE patient, a male aged 41, was admitted to the Bradford Union Hospital on April 25th, 1913, in a comatose condition. The history of his illness was difficult to obtain, but he was said to have been treated by a medical man for influenza over a period of seven days. An examination of the patient revealed the following. He was comatose and was bathed in a profuse sweat. His cheeks were flushed, and his pulse full and bounding. The pupils were equal, of medium size, and reacting sluggishly to light; there was no squint and no optic neuritis. There was marked facial asymmetry, the left side showing partial or supranuclear palsy of the seventh nerve. There was no retraction of the head. The limbs of the left side were more flaccid than those of the right, but the reflexes were normal and equal on both sides. The plantar reflex was flexor in type on either side. The abdominal reflexes were not obtained. The heart was not enlarged and there were no murmurs, the sounds being forcible and steady. The chest was full of moist sounds, but there was no abnormal dulness. There was no wound of the skull, and no discharge from the ears or nose. The temperature taken in the left axilla was 101·6° F., and in the right axilla 100·4°. A catheter was passed, but no urine was withdrawn. During this operation the patient moved his right arm and leg, but the limbs of the left side remained immobile.

A diagnosis of hæmorrhage into the right side of the brain was made and the usual treatment carried out. Re-examination of the patient on April 26th showed that the left pupil was smaller than the right, and that the left nostril moved during respiration, the right one being apparently immobile. The patient was able to move his left arm and leg, but not to any marked extent. He attempted to speak, but the sounds he made were incoherent. Towards night he took a little milk. On the 27th he was quite unconscious. The temperature as shown by the four-hourly chart was hectic in character, and the patient was bathed in a profuse sweat. It was quite natural to conclude from these details that the original diagnosis of cerebral hæmorrhage was incorrect, and that the patient was really suffering from a purulent affection of the brain, the nature and situation of which were certainly not clear. Later in the day the nurse in charge of the case reported the presence of a foul greenish discharge which "came into the mouth," and necessitated frequent removal. The discharge was very free, and it was impossible to determine by what path it reached the mouth. The chest was carefully examined for the possible presence of an empyema, but without success; and an examination of the

ears and nose, somewhat difficult under the circumstances, revealed no disease. The patient died the same evening.

Necropsy.—The results of the post-mortem examination were as follows. The heart, kidneys, and spleen were normal. The lungs were congested and the bronchi contained a quantity of mucus. There was no empyema. A search was made for signs of suppuration in the pharynx and tissues of the neck, but without success, nor was there any evidence pointing to disease of the air sinuses of the face. There was, however, a perforation in the left tympanic membrane which had not been seen during life, and through which a drop of pus had exuded. The calvarium was normal. The brain, however, showed extensive disease. There was a large abscess in the left temporal lobe, communicating with the lateral ventricle. The walls of the abscess were roughened and firm, and enclosed a small quanity of pus possessing the same odour and appearance as that of the discharge which was noticed in the patient's mouth shortly before death. Below, the abscess communicated with the left middle ear through the petrous portion of the temporal bone. The communication was very large, measuring a quarter of an inch across, and it was found possible to pass a probe through the outer ear into the skull by way of the aperture in the petrous portion of the temporal bone without encountering any resistance. Over the motor area on the right side of the brain there was extensive purulent meningitis, but the left cortex was unaffected. There was some plastic exudate upon the base of the brain, but no pus. There was no sign of disease of the right ear or of the right temporal bone. The presence of the meningitis upon the right motor area was sufficient to explain the paralysis of the lower half of the left side of the face and of the paresis of the left arm and leg.

Remarks.—This case would seem to be of interest for two reasons. 1. In the first place, there can be no doubt that the meningitis upon the right side of the brain was due to the spread of infection from the left petrous bone, yet the base of the brain was very little affected, and the surface of the left cerebral hemisphere not at all. One would have thought at least that those areas nearest to the primary infection would have been the first to be affected during the spread of the disease. Moreover, the few focal symptoms shown by the patient during life were sufficient to warrant a diagnosis of disease of the right side of the brain, such disease being proved post mortem, yet there was nothing to suggest the presence of the cerebral abscess. 2. In the second place, the unusual termination of the cerebral abscess deserves attention. It will be remembered that shortly before death a large quantity of foul-smelling matter appeared in the mouth and that its origin was uncertain. A close examination of the mouth and sinuses of the face post mortem failed to disclose any disease, nor was there any sign of suppuration in the tissues of the pharynx or neck. There can be little doubt that the discharge consisted of the contents of the cerebral abscess, which was shown to be almost empty post mortem. The path taken by the pus in the passage from the brain to the mouth was not very obvious, and it was difficult to explain why no escape was made by way of the external ear, which did not present any obstacle. It was an easy matter, however, for the discharge to reach the middle ear through the aperture in the petrous portion of the temporal bone, and the view is held that it eventually entered the mouth by way of the Eustachian tube, which would seem to have been the only available course. It is well known that a brain abscess associated with middle ear disease may discharge itself through the external ear, but the more ordinary text-books do not mention such a path as appears to have been taken by the pus in the case under discussion. Such a termination of a cerebral abscess is sufficiently rare to justify more than a passing interest, though possibly similar and unreported cases have been noted from time to time by surgeons whose domain is limited to the ear and its adnexa.

Bradford.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—Lady Wantage has kindly consented to distribute the prizes at the opening session on Oct. 1st, which will take place in the hospital out-patient department at 3.30 P.M., when the Dean, Dr. William Hunter, will deliver an address on University Medical Education. The annual dinner will take place the same evening at the Adelaide Gallery at 7 for 7.30, with Mr. H. F. Waterhouse, F.R.C.S., in the chair.

A CASE OF

ADVANCED CARCINOMA OF THE CERVIX UTERI CONTAINING TWINS

TREATED BY VAGINAL HYSTERECTOMY.

BY H. B. MYLVAGANAM, F.R.C.S. ENG.,
SURGEON TO THE VICTORIA HOSPITAL, BANGALORE.

IT is not often that one sees a case of carcinoma of the cervix uteri, with the cervix eaten up and bleeding profusely, to be pregnant at the same time with twins. Such a unique case came under my observation last year at the Victoria Hospital, Bangalore.

Pregnancy in a fibroid uterus has been recorded from time to time, and there seems to be nothing unfavourable for pregnancy to take place so long as the myoma is small in size and is of the intramural or subperitoneal type. In the submucous variety the hæmorrhage is so profuse and the uterine cavity is so much distorted that an impregnated ovum is not likely to find a congenial abode in the uterine cavity to undergo development. In a case of carcinoma of the body of the uterus the conditions are unfavourable for pregnancy. But in the case of carcinoma of the cervix the body of the uterus is free, and when once the spermatozoon

Reproduction of a photograph of the parts removed.

finds its entrance inside the uterus there is no difficulty for pregnancy to take place. The spermatozoon in this case must have had sufficient vitality to withstand the destructive influence of the discharge from the cancer. The following is a brief history of the case.

The patient, a married Hindu Brahmin, aged 40 years, was admitted into the Victoria Hospital on April 28th, 1912, with a history of passing blood profusely by the vagina for the past six months without pain or any other inconvenience.

As to the gynæcological history, the patient was married in the Brahminical sense in her tenth year, which is equivalent to a betrothal, but the consummation took place after she attained the age of maturity in her fourteenth year. She gave birth to six sons and two daughters, of whom two sons and two daughters have died in their infancy. About 1¼ years before her admission she gave birth to her last child, who was alive for four months. Menstruation appeared five months after her last confinement and continued for five days. It continued regularly for three months. Since then she has had sero-sanguineous discharge from the vagina once in 15 or 20 days without any pain, the discharge continuing for three or four days. About three months prior to her admission she passed clots of blood without pain, for which she was treated for eight days. About 15 days prior to her admission she had another attack of hæmorrhage which lasted for a day only. Coitus had taken place off and on since the death of her last child, and she used to pass blood in small quantities on each occasion.

The patient on admission was ill-nourished. She had lost flesh and colour since the commencement of the hæmorrhage. Her appetite was good. No temperature. Heart and pulse were normal. On vaginal examination the cervix was found ulcerated and excavated. The edges of the ulcer were hard and indurated. The ulcerated area was friable and bled easily. The discharge was very offensive and purulent. The vaginal wall was not involved. On bimanual examination the body of the uterus was felt enlarged and freely movable. The sacro-uterine ligaments were felt to be free on rectal examination. The cervix could be brought down easily with the aid of a vulsellum forceps.

An operation was performed on April 29th, 1912. The ulcerated area was cauterised and the whole uterus removed by vaginal hysterectomy. The anterior and posterior vaginal walls were left ununited, and a gauze drain was passed into the pelvic cavity. The patient made a good recovery and was discharged from the hospital on June 8th.

On cutting open the uterus (see figure) there were seen, to my surprise, twins, each fœtus being enclosed in a separate amnion. The idea of pregnancy never entered my mind on account of the frequent hæmorrhages. The age of the fœtuses was probably 3 months.

Bangalore.

A CASE OF
RHEUMATIC ARTHRITIS TREATED WITH RHEUMATISM PHYLACOGEN.

BY MARIAN ERSKINE, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.,

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IN view of the comparatively recent introduction of the phylacogens into therapeutics the following case may present some points of interest.

The patient, 33 years of age, was admitted into the Edinburgh Hospital for Women and Children on May 2nd, 1913, complaining of pain, stiffness, and swelling of the left knee and hip so severe as to render walking impossible. The condition started during the autumn of 1912 with an acute attack of pain and swelling of the left knee, and subsequently the left hip became involved.

On admission the left knee was found to be greatly swollen and very painful and tender to the touch. Any attempt at active or passive movement gave rise to the most intense pain. The left hip was affected in a similar manner, but in a less degree. Apart from the local condition, the patient's general health was fairly good and she was well nourished. There was a considerable degree of constipation, but there was no evidence of bacterial infection. The constipation was treated, diet was regulated, and the usual remedies were given, including radiant heat and ionisation with potassium iodide, but at the end of a month's treatment there was no noticeable improvement in the symptoms. Accordingly, I resolved to try the effect of rheumatism phylacogen, having heard reports of the good effects of this preparation in similar cases. On May 29th I began with a subcutaneous injection of 2 c.c. About 12 hours after the injection the patient had a slight reaction, the temperature and pulse rose, and she felt sick and vomited a little. Thereafter the injection was repeated every second day, increasing the dose each day till eventually she was receiving 10 c.c. The reaction after each dose was fairly severe, the temperature rising to from 100° to 102° F., the pulse increasing to 115, and the patient complaining of pain in all her joints. These symptoms quickly subsided, however, and after the third injection the knee was distinctly less swollen and tender, and was slightly movable. This improvement steadily continued, the pain in the hip and knee gradually subsided, and on June 8th, after the sixth injection, the patient could flex and extend her leg without pain, and the swelling had practically gone. On the 14th she was allowed up for the first time, and found that she could walk about the ward without much difficulty. On the 22nd she was discharged—walking out of hospital.

Before admission the patient had not been able to walk for three months. On July 14th she reported herself as having had no return of pain, swelling, or difficulty in walking, and as being quite able to undertake her daily work.

The time that has elapsed since the cessation of the treatment is of course too short to preclude the return of the symptoms, but the results, in view of the failure of other remedies, seem sufficiently encouraging to warrant the further trial of this preparation.

Apparently also the remedy is of benefit in obstinate cases of myalgia and neuralgia. This was evident in a case of sciatica in a young woman. When this patient came under my care she had been suffering from an attack of three or four weeks' duration, the pain being sufficiently severe to keep her awake at nights and to render movement a matter of difficulty. There was tenderness at all the nodal points of the left sciatic nerve and some fibrosis of the muscles of the left thigh and leg. Ordinary remedies had failed to produce any amelioration of the symptoms. The first two doses (2 c.c. and 3 c.c.) gave rise to no reaction, and had little, if any, effect on the pain; but the third injection (5 c.c.) was followed by a sharp rise of temperature and pulse, accompanied by intense pain and swelling of the left arm and shoulder, which persisted for a couple of days. The sciatic pain, however, had completely gone, and this fact, combined with the discomfort of the reaction, made the patient refuse further injections. She remained under my observation for three weeks longer, during which time she had no return of the pain, and was able to walk and run without any difficulty at all. Another case of obstinate lumbago in a woman of 48 was followed by a similarly satisfactory result.

Edinburgh.

FOREIGN UNIVERSITY INTELLIGENCE.

Genoa: Dr. Piero Boggio has been recognised as *privat-docent* of Odontology.—*Georgia, University of (Augusta College of Medicine):* Dr. R. Vanderhorst Lamar has been appointed Professor of Pathological Anatomy.—*Helsingfors:* Dr. A. Erlandsen, of Copenhagen, has been appointed to the chair of Hygiene, in succession to the late Dr. Hjelt.—*Jena:* Dr. R. Eden has been recognised as *privat-docent* of Surgery.—*Leyden:* Dr. E. de Vries has been recognised as *privat-docent* of Neurology.—*Modena:* Dr. Virginio Ramazotti has been recognised as *privat-docent* of Dermatology and Syphiligraphy.—*Montreal (McGill University):* Dr. Campbell Geddes, professor of anatomy at the Royal College of Surgeons in Ireland, has been appointed to the chair of Anatomy.—*Munich:* Dr. L. von Zambusch, of Vienna, has been appointed Extraordinary Professor of Dermatology.—*Palermo:* Dr. Vincenzo Baviera has been recognised as *privat-docent* of External Pathology.—*Pavia:* Dr. Ernesto Brugnatelli has been recognised as *privat-docent* of General Pathology, and Dr. Ambrogio Gradi as *privat-docent* of Medicine and Medical Semeiology.—*Philadelphia (Jefferson Medical College):* Dr. John C. Da Costa and Dr. F. J. Kalteyer have been appointed Adjunct Professors of Medicine.—*San Francisco (Leland Stanford University):* Dr. Thomas Addis has been appointed Adjunct Professor of Medicine.—*Stockholm:* Dr. J. Holmgren, *privat-docent*, has been promoted to the Chief Physiciancy of the Medical Clinic, in succession to Dr. Henschen, who is retiring.—*Washington (University of St. Louis):* Dr. G. Canby Robinson has been appointed Adjunct Professor of Medicine.

Reviews and Notices of Books.

Glycosuria and Allied Conditions. By P. J. CAMMIDGE, M.D. Lond. London: Edward Arnold. 1913. Pp. 467. Price 16*s.* net.

Dr. Cammidge gives an interesting analysis of the problem of glycosuria, using this term so as to include all those conditions in which dextrose appears in the urine, either temporarily or as a more or less persistent condition. He also deals with those in which other sugars and carbohydrate substances occur in the urine. Dr. Cammidge maintains that glycosuria is essentially a chemical problem, and he therefore discusses it primarily from the chemical standpoint and then proceeds to a consideration of its pathology, symptomatology, diagnosis, and treatment.

The first three chapters are entirely chemical and deal with the classification, properties, and physiology of the carbohydrates and their derivatives, the detection and differentiation of sugars and other reducing substances in the urine qualitatively, and the quantitative estimation of the sugars, acetone bodies, total nitrogen, and ammonia nitrogen in the urine. An interesting chapter follows dealing with the subject of experimental glycosuria. The forms especially considered are puncture diabetes, drug glycosuria, including that form produced by phloridzin, and glandular glycosuria. The rôle of the pancreas in the production of hyperglycæmia and the resulting glycosuria is cohsidered at considerable length. After reviewing the various hypotheses put forward to explain the part played by the pancreas in this connexion, Dr. Cammidge states that the view now most generally held is that this organ produces an internal secretion which, passing into the blood, brings about the destruction of dextrose elsewhere in the organism; but he concludes that the manner in which it exerts its metabolic functions, the relation of the islands of Langerhans to the acini, and the relative importance of the islands and the acini in carbohydrate metabolism, are questions which await for their solution evidence more conclusive than is at present available. The functions of the suprarenals, pituitary gland, the thyroid, and the parathyroids, in relation to the production of glycosuria are also discussed, and the theory of the correlation of these glands put forward by Eppinger, Falta, and Rudinger is clearly outlined. Briefly stated, this theory suggests that the ductless glands may be divided into an accelerator group comprising the thyroid, pituitary, and the suprarenals, and an inhibitory group, of which the pancreas and the parathyroids are the most important. It is further suggested that the internal secretions of the pancreas and thyroid mutually inhibit each other's activities, that there is a similar relationship between the pancreas and the chromaffin tissues, while the thyroid and chromaffin tissues promote one another's actions. Alimentary glycosuria is next considered. The physiological form of the condition is discussed and the assimilation limit of the various carbohydrates is given. The lowering of this assimilation limit in disease so as to produce pathological alimentary glycosuria is then considered and its relation to disorders of the nervous system, the liver, the pancreas, thyroid and other glands, and to toxic disturbances produced by infectious diseases, poisons, and drugs, is clearly described.

The greater part of the remainder of the book is devoted to an exhaustive study of persistent glycosuria, including under this term the various forms of diabetes. The urinary changes are considered at length, and the changes in the blood and the tests introduced by Williamson and Bremer are described. The complications are next discussed, and an interesting account is given of the condition of acidosis, together with the mechanism of its production. The pathology of diabetes is dealt with, and the information gained from the morbid anatomy of the disease is discussed in the light of the results of experimental diabetes. This chapter is a very interesting one, and in it the various theories as to the pathogenesis of diabetes are clearly stated and critically examined. Dr. Cammidge concludes that there is a tendency at the present time to revert to the doctrine that over-production of sugar is the main cause of diabetes, and to abandon the theory that diminished consumption is the essential element. In this same chapter the question of diagnosis is examined, and the various tests, more especially those with the object of determining whether the pancreas is at fault, including those devised by the author himself, are discussed. The subject of the diet in diabetes is next considered at length. Dr. Cammidge recommends that certain preliminary investigations should be made to determine the type of case, and that then the diet should be constructed after further metabolic experiments controlled by analyses of the urine and regular weighing of the patient. He strongly deprecates the giving of lists of food substances which may be taken, and of others which should be avoided. He urges that the quantities allowed are also of the greatest importance, and maintains that it is necessary to know how much and what kinds of carbohydrates may safely be given, the quantity of protein necessary to maintain nitrogenous equilibrium, and the amount of fat needed to complete the energy requirements of the patient. The methods of applying these principles are described in detail. A full discussion of the drug treatment and the general management and hygiene of the diabetic patient follows, as well as the treatment of complications, including acidosis and coma. The conditions under which sugars other than dextrose appear in the urine are examined, including lævulosuria, maltosuria, lactosuria, galactosuria, and pentosuria. A chapter is devoted to alkaptonuria and diabetes insipidus, and the general properties and reactions of the sugars and related substances are given in an appendix.

Dr. Cammidge's book affords an instructive, suggestive, and practical review of the subjects with which it deals, and it should be of great value to the practitioner as well as to the scientific worker; to the former because it affords carefully devised directions, to the latter because it gives a valuable summary of the problems of glycosuria and diabetes, together with a useful bibliography.

Orthopædics in Medical Practice. By Professor ADOLF LORENZ, Regierungsrat, Director of the Imperial University Ambulatorium for Orthopædic Surgery in Vienna; and Dr. ALFRED SAXL, Assistant Surgeon in the same. Authorised translation from the German by L. C. PEEL RITCHIE, Ch.M., M.D., F.R.C.S. Edin., Tutor in Clinical Surgery, University and Royal Infirmary, Edinburgh. Illustrated. London: John Bale, Sons, and Danielsson, Limited. 1913. Pp. 288. Price 7*s.* 6*d.* net.

THIS book is not intended as a text-book on orthopædic surgery, but is designed to show to the physician the bearing which orthopædics has on the treatment of cases which are usually considered as belonging to the physician's department. It aims to provide the medical practitioner with full information as to the present-day developments in this special field, so that he may make personal use of the knowledge in his practice, and, realising what can be done for paralysed patients by the orthopædic surgeon, may be guided to avail himself of his services. While presenting a review of current opinions from all sources, the work is mainly concerned with making known those special methods associated with the name of Professor Lorenz. In the preface by Professor Lorenz mention is made of the desire expressed by Professor Lothar von Frankl-Hochwart

to conjoin a text-book on "Orthopædics in Medical Practice" with the monumental work of Nothnagel as an appendix to it. The present work, undertaken by Dr. Alfred Saxl, under the editorial collaboration of Professor Lorenz, is in fulfilment of this wish.

As a general rule, in treating such affections as tabes dorsalis, the possibility of securing immediate and considerable relief by mechanical devices has too little attention given to it. Professor Lorénz recounts an interesting instance. A patient suffering from marked tabes was for a long time under the observation and treatment of his physician, a man of unquestionably high scientific attainments, but attempts to bring relief had not met with success. One day this patient sought an explanation from his medical man as to why it was that he felt so remarkably more comfortable when he stuck both his hands in the pockets of his trousers. "Pure imagination," was the reply. When, however, he came out afresh with the inquiry as to how it was he felt still better when he kept his hands in the pockets of his riding-breeches, his physician declared that there was not the least doubt by now that it was a matter of auto-suggestion. When at a later date a vertebral arthropathy was demonstrated in this patient by a skiagram, he was ordered a supporting corset, the effect of which he could hardly sufficiently praise. This case shows the necessity for granting to orthopædic indications a wider range.

Some of the medical conditions in the treatment of which orthopædic surgery finds a useful place are fully described. These are all conditions of deficient aeration of the lungs; badly formed thorax; scoliosis consequent on empyema; embarrassment of the heart or pressure on the great vessels, causing interference with digestion; and gastric catarrh and hæmorrhages due to displacement of the stomach. In cases of severe spinal curvature these may all occur. Other affections requiring orthopædic treatment are of the nervous system, such as paralytic and neuralgic affections of the peripheral nerves, diseases of the spinal cord, such as locomotor ataxia, infantile paralysis, and progressive muscular atrophy, myelitis in vertebral caries, typhoid spondylitis, cord and root compression in arthritis deformans, spinal gliosis and syringomyelia, &c. Most marked are the happy results to be obtained by modern methods in infantile cerebral paralysis (diplegia and hemiplegia). A chapter or section is devoted to the treatment of each of these conditions, and many that have not been enumerated, and in each case the advice given is of the best and most approved kind. There is a very full reference to the literature of the subject, occupying 15 pages and containing references to nearly 250 authors, only nine of whom are writers in English and of these three are American. Does this indicate poverty of output or need of publicity amongst English writers?

The book is very well produced, the paper, printing, and binding being all that can be desired. The illustrations are clear and useful, which is more than can be said for many books nowadays. The book can be recommended as efficiently fulfilling its design and adding to the real library equipment of the modern physician.

Papers on Psycho-Analysis. By ERNEST JONES, M.D., M.R.C.P., Associate Professor of Psychiatry, University of Toronto, Secretary of the American Psycho-analytic Association. London: Baillière, Tindall, and Cox. 1913. Pp. 432. Price 10*s.* 6*d.* net.

IN this volume Professor Ernest Jones has collected some 20 papers devoted to one or other aspect of psycho-analysis which have appeared at intervals during the last few years, and with which those who have been following the development of that vexed subject are doubtless already familiar. Professor Jones, however, remarks in his preface that he has not hesitated to alter considerably their original form by modifications and additions wherever these have appeared desirable. In their present form the reader will find that these papers contain a great deal of instructive exposition and elucidation of Freudian lore, but they are more than a mere reproduction of the views of the Viennese professor. The writer has incorporated much material from his own experience, and in more than one of these essays he combats the criticisms which have been advanced against the Freudian theory, criticisms with which he himself has come into contact. Thus the value of the book as an exposition of Freudian views is enhanced by this element of personal experience of the subject. At the same time, Professor Jones warns the reader against imagining that his book contains anything like a complete description of Freud's teaching.

Professor Jones is an enthusiastic follower of Freud, and has done more than anyone to popularise Freud's theory among English-speaking peoples. There is more than one indication in the book that those who happen to differ from him do not always appear to obtain that consideration which is their due, while on the other hand the reader is left with the impression that unproven hypotheses or conjectures are sometimes exaggerated into "facts" whereon to build further hypotheses. To take but one instance: in the chapter on the pathology of morbid anxiety we do not consider that adequate attention is paid to the not infrequent organic origin of anxiety or fear, or to its arising in the course of a vagal disturbance. To dismiss these possibilities as "pure suppositions, for which no evidence whatever has been adduced," is to do less than justice to views to which wide neurological experience lends support. The papers as a whole, however, form a noteworthy contribution to the subject of psycho-analysis and the Freudian theory, and as such they commend themselves to the favourable notice of the neurologist and the physician.

Cunningham's Text-book of Anatomy. Edited by ARTHUR ROBINSON, M.D. Edin., F.R.C.S. Edin., Professor of Anatomy, University of Edinburgh. Fourth edition, enlarged and rewritten. Illustrated by 1124 figures from original drawings (637 of which are printed in colours) and two plates. London, Edinburgh, and Glasgow: Henry Frowde and Hodder and Stoughton. 1913. Pp. 1596. Price 31*s.* 6*d.* net.

THE fourth edition of this work, which is now under the editorship of Professor Arthur Robinson, has outrun its predecessors in general bulk by the addition of 169 pages and the inclusion of nearly 200 new illustrations. This increase in size has given cause for some hesitation as to the manner of its treatment as an object of criticism. Is it to be criticised as representing a standard British work of reference on human anatomy, or is it to be regarded as a guide for the student in the preparation for his examinations? As a pure work of reference it cannot be accepted as complete. Todd's Cyclopædia of 1835–1859 and the tenth edition of Quain's Anatomy must still be considered as the only British anatomies which can be regarded as works of reference.

The present book contains no systematic references to original contributions; it leads the seeker after truth no farther afield than its own pages in most subjects, and the very purpose of its original production (though it is true that is being departed from) causes the work to represent too limited a school of thought to be considered a real index of British anatomy. Earlier editions might have been reviewed as tributes paid by former pupils and associates to Sir William Turner, to whom the work is dedicated. As the collected contributions of the members of a particular

school done in honour of their teacher, the reviewing of Cunningham's Anatomy presented no especial difficulty. But even this ground has been taken away, for the circle has been enlarged and the list of contributors is no longer restricted to the names of men connected with the teaching of Sir William Turner or even with the Edinburgh School.

It must then be as a student's manual that the work is examined, and from this point of view only has the present reviewer ventured to criticise in detail, and from it the text-book seems to be in some ways rather unsatisfactory, although so much industry and real learning have gone to its making. In the first place a student must be taught consistently. If the work has to be done by a number of authors the editor should see to it that all the authors teach, as far as possible, the same views, either those which the latest developments of the science have determined as most probable, or those imposed upon them by the master whom they intend to honour. In the preface to the first edition of this book the late Professor Cunningham congratulated himself on the thoroughness with which this had been done, short of depriving contributors of all originality of treatment. In the preface to the present edition Professor Robinson points out that each author is solely responsible for the views expressed in his own section, and says that discrepancies may be found. Such discrepancies are natural; the question is, are they excessive or unavoidable?

In the case of a work of this size it will readily be understood that the contradictions in teaching are bound to unfold themselves slowly. It is only when a succession of students work with the book that their questionings will arouse in the mind of the teacher a suspicion that the guide which they are using is in some way confusing them. A reviewer may be able to indicate some discrepancies; he will not find all by a long way, but that he can find any is an index that this danger of confusion lurks in the book. That some pitfalls exist for the student the following instances will show. On p. 675 the ligamenta denticulata are described as derivatives of the pia mater; while in Fig. 601 on p. 677, where colour differentiates the meninges, they are coloured in continuity with the dura mater. A study of Figs. 601 and 597, reproduced in such close proximity, should have been made before the work came into the student's hands. On p. 1431 is found this statement: "In the superior half of the anal canal are the rectal columns of Morgagni"; while on p. 1230 it is said that "the lower portion of the anal canal presents ..... the columnæ rectales (columns of Morgagni)." Strangely enough, the authors of both sections use the same figure to illustrate their assertions. The figure (658) which depicts the origin and distribution of the auditory nerve has always been a stumbling block, for although it has been altered from its first form some part of it remains persistently upside down. Familiarity might have reconciled students to this figure in time, but we are afraid that the combined study of Figs. 658 and 535 will delay the reconciliation.

In some ways the section on general embryology is in want of agreement with the details of embryology given in the separate sections. One instance is selected, but others might be added. Page 48: "In both sexes the urino-genital section of the cloaca is separable into three parts: (1) a cranial part, which is converted into the urachus, or middle umbilical ligament; (2) an intermediate part, which becomes the urinary bladder; and (3) a caudal part, which in the female is transformed into the urethra and the vestibule of the vagina, and in the male it is developed into the urethra." Page 1333: "In the female the part of the urethra near the internal urethral orifice is developed from the inferior ends of the Wolffian ducts and has a similar origin to the basal portion of the bladder." Page 1243: "Furthermore, the allantois, a diverticulum of the hind gut, plays an important part in the formation of the urinary bladder." These are somewhat confusing passages when taken together; but it is possible that some of the confusion may result from a lack of agreement upon the precise meaning of terms. Such lack of agreement is evident, we consider, in other portions of the book; for instance, on p. 627, we have "the olfactory bulb and tract, the area piriformis, tuberculum olfactorium, corpus paraterminale, and formatio hippocampalis together form ..... the rhinencephalon"; while on p. 682 it is said that "the rhinencephalon, or olfactory bulb, is a hollow outgrowth from each telencephalon." Sufficient care has not been given to the references to, and the legends of, the figures. On p. 1182 Peyer's patches are described as resembling "a raised map of a very mountainous district"; but upon turning to the figure to which reference is made we find a view of "The posterior relationships of the kidneys." Fig. 485 shows a section of the floor of the fourth ventricle, but this is omitted in the legend, which simply reads "Transverse section of the human embryo," &c. In Fig. 590 "left" is obviously used instead of "right." Fig. 1015 should have been replaced by a more modern and more accurate one.

Many of the new illustrations are very beautiful and are excellent from every point of view, and in most sections colour has been used with judgment. We notice, however, several instances of a too free and altogether useless application of colours to diagrams and figures best left in black and white. It is a great pity that the name of the late Professor Ambrose Birmingham was not retained, as the original author, at the heading of the section on the digestive system, for his contribution was perhaps the best feature in the original edition of the book, and the custom has been maintained in other sections. The index has always been unsatisfactory and still is so; at the head it is stated that "figures in heavy type refer to pages on which structures are most exhaustively described." Unfortunately this excellent scheme is not carried out, and heavy type is used in a most haphazard way. Turning at random to "ligament," one finds "ligament, coronary," with two references, both in heavy type; "ligament, costo-clavicular," with two references, both in ordinary type; "ligament of ovary," with one reference in heavy type; "ligament of pelvis," with one reference in ordinary type, and so on.

It is because this book is a great and responsible one, and its editor has a well-merited and far-reaching reputation as an anatomist, that we have devoted so much space to the demonstration of our view that the whole work wants overhauling. No one could do this better than Professor Arthur Robinson. A fourth edition should not come into the hands of its readers with quite so many imperfections. This is the best edition that has appeared, but the work has reached a very dangerous point at which the editor needs a determined policy of securing some uniformity of teaching among his contributors. In some places it would almost seem that the old bottle is in some danger of bursting from the presence of the new wine within; it becomes, therefore, an increasingly important duty to see that the skin is sound.

Traité Médico-Chirurgical des Maladies de l'Estomac et de l'Œsophage. By Drs. A. MATHIEU, L. SENCERT, and TH. TUFFIER, with the assistance of Drs. J. CH. ROUX, J. L. ROUX-BERGER, and F. MOUTIER. Paris: Masson et Cie. 1913. Pp. 934. Price 20 francs.

IN this volume the authors have given an admirable account of diseases of the stomach and œsophagus, both from the physician's and the surgeon's point of view. Special attention has been paid to diagnosis and treatment. The first portion of the work is devoted to a description of diseases of the œsophagus, which lie more in the domain of

surgery than of medicine. Dr. Mathieu and Dr. Sencert have written a most exhaustive survey of the various maladies affecting that organ, no less than 357 pages being occupied with a consideration of the pathology, diagnosis, and treatment of those diseases. The section on foreign bodies in the œsophagus is of special interest, and by aid of illustrations the necessary operative procedures are fully and clearly explained. The second portion of the book deals with diseases of the stomach, and is divided into four sections: (1) Methods of examination and symptomatology; (2) the principal functional syndromes; (3) diseases of a "medico-chirurgical" character, such as ulcer and malignant disease of the stomach; and (4) indications for surgical operations and their technique. The surgical aspect in this portion of the work is again more developed than is the medical. The book will commend itself more to the surgeon than to the physician; but all practitioners will find much that is new and suggestive in the authors' remarks and descriptions, and the presence of upwards of 300 illustrations considerably adds to the value of the letter-press.

Experimental Psychology and Pedagogy, for Teachers, Normal Colleges, and Universities. By R. SCHULZE. Translated by RUDOLF PINTNER, M.A. Edin., Ph.D. Leipzig, Professor of Psychology and Education at the University of Toledo, Ohio. London: George Allen and Co. 1913. Pp. 364. Price 15*s.* net.

THE present volume is a translation of a work which has found a wide sale in Germany, and whose object is to apply the methods of experimental psychology to educational purposes. Most of the experiments devised or described by the author were carried out in the Psychological Institute of the Leipzig Teachers' Association, and the translator hopes this will prove an incentive to English teachers to follow along the same lines, for it is only by making education a science that the status of the profession can be raised.

After a preliminary chapter dealing with measurements in physics and in biology and psychology, a full discussion is given of the methods of psychical measurement, as tested by the measurement of sensation. The investigation of the symptoms and movements of outward expression is followed by a description of experiments on the will, and on consciousness, attention, and assimilation. Much space is devoted to the methods of memory experiments, to methods of recognition and of reproduction. Speech, physical and mental work with its rhythm, symmetry, and fatigue, are fully examined. In an appendix a list of apparatus for colleges or normal schools is given. The book is adorned with numerous illustrations and diagrams, which serve their purpose well.

We have found this book very suggestive and have formed the opinion that it is well calculated to stimulate interest in the application of experimental psychology to mental development both in childhood and in youth. The translation reads smoothly.

Terminologie der Entwicklungsmechanik. Von W. ROUX. Leipzig: Wilhelm Engelmann. 1912. Pp. 465. Price 10 marks.

THE experimental inquiry into the causes of all aspects of development, the actual process as seen in ontogeny and in regeneration, and the results as displayed by researches in hybridisation, have of recent years made rapid progress, and promise to absorb continually more of the energy of zoologists and botanists. Consequently this valuable encyclopædia, edited by the founder of experimental embryology, with the help of the anatomist, A. Fischel, and the botanists, Correns and Küster, will be welcome to the general biologist as well as to those engaged in investigations of this kind.

The book is packed close with information. To indicate its scope it is enough to say that there are articles on artificial parthenogenesis, polarity, the struggle of the parts in the development of the organism, the Mosaik-Theorie, self and dependent differentiation, normal and abnormal, typical and atypical development, functional adaptation, equipotential systems, stimulus, reaction, response, hormones, mutation, variation, inheritance, the nucleo-plasma relation, reduction (regressive development), regeneration, causality, and teleology; while the work of Roux, Driesch, Morgan, E. B. Wilson, Weismann, Sachs, Boveri, Loeb, Przibram, Herbst, Bateson, and many others receives full consideration. There are, however, some omissions, the most serious of which is that of all reference to Pearson's statistical methods, only Duncker's second-hand epitomes being quoted. Minor faults are that entelechy is treated of only incidentally under Lebewesen, whereas it surely deserves a place in its own right; under Zweckmässigkeit there is no account of the Kantian teleology, the doctrine of the general purposiveness of the organism, and no article on Vitalismus. Under growth-rate Robertson's important work should surely have been quoted. Under Rajeunissement karyogamique, the researches of Calkins and Woodruff; and under Reunition (of dissociated cells), C. V. Wilson's pioneer work on sponges, and Huxley's later contribution to the subject should have received mention; while Bütschli's use of Entmischung in his theory of protoplasmic structure should not have been forgotten. It would have been interesting, too, to have special discussions on the cytoplasmic and nuclear factors in development, on reducing division, and definitions of egg-equator and symmetry plane. We regret to see the cacography "morpholaxis" perpetuated on p. 336, though under its own title the correct spelling is given.

Despite its omissions, which can be easily remedied in a second edition, the usefulness of the work is undeniable.

The Hygienic Management of Labour in the Tropics: an Essay in which is incorporated the Labour Code of the Federated Malay States Government. By Dr. P. N. GERRARD, D.T.M. Cantab. Singapore: The Methodist Publishing House. 1913. Pp. 80.

ON first glance at the title "The Hygienic *Management of Labour* in the Tropics," we assumed that we had to deal with an obstetric treatise, but further examination showed us that the book had been written by Dr. Gerrard, a member of the Federated Malay States Medical Service, with the laudable intention of supplying useful information to planters and estate managers as to the medical management of coolies. As the work is intended for the use of laymen it is perhaps unnecessary to criticise it strictly from the medical point of view. On the whole the advice given is sound and likely to prove of service, but we take exception to some of the statements. We deprecate, for instance, the advice on p. 53, in regard to the appearance of cholera in coolie lines: "The most satisfactory method of dealing with infected houses is, of course, to burn them." The author subsequently states that the cause of the cholera will usually be found "in a well or drain water, or some article of diet, rather than to be actually connected with the lines." In the circumstances a planter would be justified in asking, Why then suggest the burning down of the infected houses when the source of the mischief is to be looked for in food or water? It may be a local custom, but we object strongly to the restricted use of the word "sanitation" as meaning only "excrement disposal" or "latrine provision." There is evidence of hasty preparation of the book for the press. "Leprousy" is an unusual way of spelling this word, especially in a table of contents, and the following paragraph, which we copy

verbatim from p. 18, seems to require some further explanation: "Too much stress cannot be laid upon the system of facilitating all sanitariness amongst coolies, at present they are blamed as a all sanitariness amongst coolies. At present they are blamed as a altogether bestial; they have no opportunity of being otherwise unless the European places every convenience within their reach."

Appended to the "Essay" are a number of plans for semi-permanent and permanent lines and latrines, prepared by Mr. W. A. Wilkinson, A.M.I.C.E.

Lehrbuch der Gerichtlichen Psychiatrie für Mediziner und Juristen. By Dr. ERNST BISCHOFF, Privatdozent für Psychiatrie und Nervenheilkunde in Wien. Berlin und Wien: Urban and Schwarzenberg. 1913. Pp. 275. Price, paper, 8 marks; bound, 10 marks.

Dr. Bischoff, who holds an official position as medical referee in psychiatry in certain of the Viennese law courts, has written a useful book on psychiatry intended to appeal alike to the legal and the medical profession. The distinctions between health and disease in the legal sense are carefully differentiated, and numerous personal cases are quoted, more especially those of a borderland nature, where the arriving at a definite decision was often attended with difficulty. Advanced and typical cases of mental disease are from the special standpoint of the book less instructive. A discussion of important legal decisions in the Austrian courts that have a bearing on the subject of the volume is given in some detail. The second part is devoted to a compendium of the different forms of mental disturbance. As it contains a digest of Austrian and German law on mental responsibility and on the procedure in mental cases, it is likely to prove of value to medical jurists of these nationalities.

LIBRARY TABLE.

Practical Physiological Chemistry. By SYDNEY W. COLE, M.A., Demonstrator of Physiology, Cambridge University. Third edition. Cambridge: W. Heffer and Sons, Limited. 1913. Pp. 230. Price 7*s.* 6*d.* net.—This is essentially a book for the laboratory, and bears abundant evidence throughout its pages of the writer's close acquaintance with advanced practical technique. He is insistent that medical men should abandon certain classic methods as untrustworthy. He regards it as lamentable, for example, that "for the investigation of the nitrogenous secretion of a patient the average medical man has at present only one method at his command." The alkaline hypobromite method is here referred to, which, he urges, should be succeeded by the microchemical methods of urinary analysis introduced by Folin, which he is convinced are reliable. The drawback to these methods is, however, that the ammonia nitrogen must be estimated independently for purposes of correction, and this is tedious. We have followed with interest the author's directions in regard to the estimation of sugar. For general practice he prefers the Benedict method, in which the copper salt is associated with sodium citrate, sodium carbonate, and potassium sulphocyanide. In the process some potassium ferrocyanide is added to prevent the possibility of cuprous oxide depositing. The thiocyanate forms a white insoluble compound with the cuprous hydrate formed by the reduction of the copper, so that there is no cuprous oxide precipitated to obscure the blue tint "Fehling's method," he says, "that has for long been the crucial test, is unreliable." It is well to remember, however, that in most instances the improved methods are, after all, based on the same principle, the reduction of an alkaline copper solution. The improvements have effected a sharper method of observing the moment when the whole of the copper salt has been reduced. The Pettenkofer test for biliary acids, which is referred to, may not be important, but it is a decided improvement to employ glucose instead of sucrose in the test, as the former does not char in strong cold sulphuric acid, whereas the latter often does, especially if there should be any rise of temperature. The author refers to this possibility of charring, but does not suggest the use of glucose, while as the reaction depends upon the formation of furfural the use of this substance direct is often an advantage. Other chapters deal in a practical manner with the digestive juices and enzymes, the chemistry of some foods, the coagulation of the blood, and the spectroscopic examination of blood pigments. The book may be commended for its sound instructional character, and in many instances it will save the student a deal of trouble in the matter of reference. The experimental details are clearly described and have the advantage of being brought to date.

MISCELLANEOUS VOLUMES.

AGAIN we have a number of miscellaneous books submitted for review which are of little direct medical interest, and yet everyone selected for notice has certain points that make it worth the attention of our readers.

An Irish Gentleman: George Henry Moore, by Colonel MAURICE MOORE (London: T. Werner Laurie, Limited. Pp. 396. Price 16*s.* net). A lively biography of the author's father. Mr. George Moore, the novelist, contributes a tasteless preface to his brother's book in which he hints that their father committed suicide, and incidentally implies that he himself would have approved of such a step; but Colonel Moore, in a slip-note, inserted, we suppose, just before publication, says: "What the Prefacer writes regarding the mode of his father's death must be taken as expressing his wishes and not the facts." George Henry Moore's biography is extremely entertaining and instructive. A traveller, a sportsman, and a politician, he was educated at Oscott, whence at the age of 15 he wrote remarkable letters to his mother in the high-flown, not to say priggish, style of the day (1826). After a short time at Cambridge he went abroad on account of a love affair of which his parents did not approve. Original in all that he did, he selected southern Russia, the Caucasus, Persia, Syria, and Egypt. His notes show that he not only saw but took note. One item of medical interest is that the test of virginity, as described in Deuteronomy XXII., was still observed in the Russian Church at the date of the journey (1834) and also in Syria. The test, we may add, is of no real value and in various mediæval treatises on medicine directions are given for counterfeiting the test. In 1837 he returned home, and from then until 1846 he occupied himself mainly with riding, racing, hunting, and duelling. In 1843 he was nearly killed when riding in a steeplechase, being carried from the field insensible. The medical men called in decided that he was dead and the question of his burial and of breaking the news to his mother was discussed in his presence. In after life he would describe how he heard every word that was said, and yet could not take any interest in the matter. He eventually completely recovered. Moore's racing career came to an end in 1846 with the Irish famine, for he sold all his horses and spared neither money nor trouble to aid his tenants. Starvation and typhus went hand in hand, and it is better to remember the heroism of the priests, the charity of voluntary workers, and the generosity of the landlords, than the pigheadedness and red tape of the Government. Moore's political position was greater than many now remember; indeed, it is claimed for him that he was the practical originator of the Irish party as an independent body. He died in 1870.

No work bearing the name of Pierre Loti will lack readers; his admirers will rightly expect in his *Siam* (translated by W. P. BAINES. Illustrated. London: T. Werner Laurie, Limited. Pp. 182. Price 7*s.* 6*d.* net), not an array of facts, not a record of exploration, but a series of *impressions de voyage*. As a child Pierre Loti had come across a description and pictures of the mysterious temples of Angkor amid the Siamese forests, and longed to see them; five-and-thirty years later the opportunity came. The alternations of tropical rainstorms and fierce sunshine, and the at first sight impenetrable forests; the graceful carvings scattered in profusion everywhere in the temple galleries and towers, inexplicably resembling those which appeared in France in the time of Francis I.; the psalmody of the monks mingling with the murmur of myriads of flies, "that produces an effect like the distant pealing of bells"—these are all described by the author in his own manner. It cannot be said that Siam is comparable with India, still less with Egypt, of which countries Pierre Loti has before now given us his impressions, either in charm of association or variety of interest; but it is not for us to grumble. Wherever the author's professional duties take him we hope he will continue to provide us with a similar series of travel pictures, that the multitude of his readers may be enabled to see what he sees, even though they never leave their own country, while those who have actually visited the scenes that he portrays will learn from him how much they have failed to appreciate, both in the picturesqueness of the places and in the interesting qualities of the people. The illustrations are from photographs, and give, no doubt, accurate representations of the Siamese temp'es; they hardly harmonise with the spirit of the author. Loti's readers all over the world will welcome this volume of impressions and many will understand his saying, recalled from the days of his childhood: "In the depths of the forests of Siam I have seen the star of evening rise over the ruins of Angkor." *Et in Arcadia fui.*

Those interested in Brazil will find a mass of information concerning it in *Brazil in 1912*, by J. C. OAKENFULL (London: Robert Atkinson, Limited. 1912. Pp. 498. Price 5*s.* net). This is the fourth year of publication of this handbook which is very different in style and scope from Loti's romantic volume, being, in fact, a great guide book. It contains chapters on the geography, topography, anthropology, and ethnology of Brazil, its history and political vicissitudes, naturalisation and constitutional and commercial laws, education, finance, postal, telegraph, and transportation services, with a full account of the fauna, flora, and mineral resources. Its thermal springs and tourist resorts, as well as its progress in science, art, and literature, are described. There are appendices containing a gazetteer, a glossary, list of consuls, cost of living, customs tariff, industries, and specialised commercial information. It is illustrated with many half-tone plates.—— Another guide book is *Canada To-day, 1913* (London: Simpkin Marshall, Hamilton, Kent, and Co., Limited. Pp. 252. Price 2*s.*), in which the present condition of Canada is described in a series of special articles, with some 300 illustrations. There is full statistical information, and many details concerning agriculture, minerals, emigration, fruit growing, stock-raising, professional occupations, education, woman's work, fishing and other sports, together with detailed descriptive, statistical, commercial, industrial, and governmental information touching the separate provinces.—— Mr. J. T. BIGGS'S *Leicester: Sanitation versus Vaccination* (London: The National Anti-Vaccination League. 1912. Pp. 784), contains in its first part a very interesting historical account of that ancient city, which is one of the oldest centres of civilised life in Great Britain. Mr. Biggs considers it in separate chapters under the British, Roman, Saxon, Danish, Second Saxon, Norman, Plantagenet, Lancastrian and Yorkist, Tudor, Stuart and Commonwealth, Hanoverian, and Victorian eras. There are chapters also on the Parliaments held in Leicester, Leicester Abbey, Royal Visits to Leicester, and Leicester's Ancient Charters. The remainder of the book, Parts II. to XV., are concerned with the antivaccination question. Leicester is, we believe, the chief stronghold in England of opposition to vaccination, and what is known as "the Leicester method" of dealing with small-pox has been often and fully discussed. On p. 714, by the way, Mr. Biggs quotes from a leading article in THE LANCET of Sept. 12th, 1891, p. 620, of which, he says, "it would be impossible for anyone to write anything more apposite, either on vaccination or on any of the other processes of inoculation." The passage referred to deals with the three distinct stages through which, as a rule, new remedies or fresh measures which are ever and anon being introduced for the alleviation or cure of disease have to pass. He quotes the first stage, that of unreasoning enthusiasm, and the second, due to the natural swing of the pendulum, that of disillusion, ending with the discovery that "the hitherto vaunted remedy is not only useless, but that it is positively harmful." Here he stops, entirely ignoring the third stage, that of its frequent restitution to "a place of more or less permanence and importance," even though modified. Such quotation is disingenuous.

Finally, we come to what should prove useful work for honorary secretaries and organisers of sporting clubs, in *Sports Management (1913), including Motor Gymkhanas*, by H. HEWITT GRIFFIN, F.R.S.S., M.J.I. (London: Putney Press, Limited. 1913. Pp. 243. Price 1*s.* net), which gives full details of how to proceed in such matters. The author also discusses, under the title of "Clocks, Clockers, and Clocking," what he terms a new disease of the brain, which, however, seems but a question of individual and personal error—viz., the loss of time between the reading of the time by the eye and the realising by the brain what the eye has seen. This is by no means an uncommon complaint amongst sportsmen, and not long ago an electrical machine was shown at an exhibition which demonstrated this variation in individuals.

JOURNALS AND MAGAZINES.

The Journal of Laryngology, Rhinology, and Otology. London: Adlard and Son. Annual subscription, £1; single copies, 2*s.* each.—Within recent years considerable progress has been made in the knowledge of the disturbances, local and constitutional, produced by pathological changes in the pituitary body. Although the hypophysis cerebri is within touch of the territory of the rhinologist, it is only within the last three or four years that the surgical attack upon pituitary tumours has proceeded by way of the sphenoid. For these reasons the July number of this journal is largely given up to articles on the pituitary body and its disorders generally, and in particular to the work of Professor Harve Cushing, whose book on the clinical states produced by disorders of the hypophysis cerebri is the most comprehensive and authoritative on the subject at present published.

Under the title of the "Congress Number" the whole of the August issue is given up to a series of articles dealing with the history and development of this triple special department of practice in Britain, with the result that not only a readable number but also an interesting contribution to the history of medicine is produced. The historical statements, however, in the different articles are in some degree at variance. In the article on the Foundations of British Otology it is stated: "In 1816 John Harrison

Curtis founded the Dispensary for Diseases of the Ear, which later became the Royal Ear Hospital, for Diseases of the Ear, in 1841. ..... This hospital can, therefore, lay claim to being the oldest special hospital in existence." In a subsequent article on British Ear and Throat Clinics Historically Considered, we find that in 1804 "the London Dispensary for the Relief of the Poor Afflicted with Eye Diseases," now familiar by the name of "Moorfields," was founded by Dr. Cunningham Saunders, an aural surgeon who treated disease of the ear as well as of the eye in this institution. In 1814 Surgeon Ryall founded the "Dublin Eye and Ear Hospital." Another interesting fact brought out in this article is that the first special hospital for treatment of disease of the throat as well as that of the ear, to the exclusion of the eye, was the Metropolitan Ear, Nose, and Throat Hospital, which was founded in 1838. Such discrepancies as to priority of foundations always arise in a series of historical articles.

To the September issue Dr. D. R. Paterson contributes most opportunely an article on the Significance of the Tonsils and the Supra-tonsillar Fossa. The position of the tonsil in the animal organism has been recently the subject of a good deal of discussion. One result of the medical inspection of school children, as Dr. Paterson remarks, has been to demand more active treatment of the tonsil, if not complete removal. Discussion has been directed towards the most effective procedure for removal, whilst conservative measures, which attempted to preserve some part of the gland, have been pushed into the background. The article deals with considerations which show that the tonsils have an essential function in the body, and that treatment, designed to preserve them whole or in part so as to enable them again to fulfil it, is based on rational lines. The view that tonsils are retrogressive structures, useless and even injurious in the economy, and therefore to be pursued with "fire and sword," is founded on a misconception of their function.

The Journal of the East Africa and Uganda Natural History Society (Longmans, Green, and Co. Price 4*s*.) maintains its high standard of excellence both in matter and illustration. The July issue contains an excellent description by Felix Oswald, D.Sc., of the Miocene Beds of the Victoria Nyanza, with six reproductions of photographs. Mr. C. W. Woodhouse contributes a brief sketch of the people on the south-eastern slopes of Elgon (from the Kwiwa to the Muberi). The arrow has played such an important part in the early history of the world that any account of its evolution is of much interest. Mr. C. W. Hobley, who writes on this subject, deals with the arrows used by the tribes in East and Central Africa. He throws no light on the problem of how the primitive rude stone arrows could have penetrated the vital parts of a bulky beast, unless it can be accounted for by the muscular strength of the primitive man, but he calls attention to a human pelvis in the British Museum in which a flint arrow is embedded in the bone of the pelvic arch. Mr. A. R. Barlow deals with the subject of Kikwyu circumcision ceremonies, and Mr. E. Wynstone-Waters, F.R.S. Edin., late senior demonstrator of anatomy at the Royal College of Surgeons, Edinburgh, commences the first part of an article on the organic cell.

DONATIONS AND BEQUESTS.—The late Mrs. Emma James, of Eastbourne, has bequeathed £3000 to Nottingham Hospital in memory of her husband, £500 each to the Royal Hospital for Incurables, Putney, and the City of London Hospital for Diseases of the Chest; and £1000 each to the Princess Alice Memorial Hospital, Eastbourne, the Cancer Hospital, Brompton, and King Edward VII. Hospital Fund.

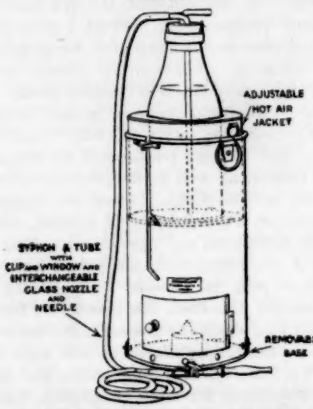
New Inventions.

PORTABLE APPARATUS FOR ADMINISTRATION OF SALINE SOLUTION.

HAVING felt both in hospital and in private practice the need of a simple and easily portable apparatus for the administration of saline solution at a heat suitable for any of the modes in which it may be wanted, some two years ago I discussed the requirements with Mr. W. Martindale, 10, New Cavendish-street, W., and after careful experiments the apparatus, of which the essential features are shown in Figs. 1 and 2, was produced. It is a modification of one

FIG. 1.

FIG. 2.


ADJUSTABLE HOT AIR JACKET
SYPHON & TUBE WITH CLIP AND WINDOW AND INTERCHANGEABLE GLASS NOZZLE AND NEEDLE
REMOVABLE BASE

originally used for another purpose. Its height is 14½ inches and it can either stand on a table or be suspended by a chain. The first trial apparatus has been in constant use for two years at the Hampstead Hospital, where the sisters of the surgical wards have found it work with uniform success, and recently three additional sets have been obtained for use in the wards. These have been found to work as well as the trial apparatus and they also are in constant use.

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Portland-place, W.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 27, 1913.

Friendly Societies and the Medical Profession.

AT the National Conference of Friendly Societies which opened in London on Thursday, Sept. 18th, under the presidency of Mr. A. H. WARREN, Past Grand Master of the Manchester Unity of Oddfellows, the most important of the debates turned upon the question of the administration of medical benefits under the National Insurance Act. Nothing new was said by anybody, and much that was very old was said by many people, but one fact came out perfectly clearly—namely, that the Conference considered that all Friendly Societies must continue to work to secure the transfer to themselves and to Approved Societies generally of the administration of these benefits. The statements of all the speakers could not be reconciled in detail. While some, for example, attributed the increase of payment made for sickness to the fact that the Friendly Societies had lost the administration of medical benefits, one speaker at least said, and gave figures in support of his words, that there had practically been no such increase in sickness claims for the first six months of 1913, and that, at any rate, the appointment of full-time referees to check any alleged excessive sickness—that is to say, to control the machinations of the malingerers—would be premature. The principle of the free choice of doctor, which was insisted upon by the Act, could be used against the institution of referees for such purposes, but this argument could hardly be employed at a meeting where the obvious feeling was that the Friendly Societies ought to be able to make their members employ medical men chosen by the officers of the different bodies. The president in his address took up the position that the fact of the medical men on the panel being severed by the National Insurance Act from association with the Friendly Societies was having serious effect upon the work of the societies, suggesting that excessive sickness claims and malingering were largely associated with the present method of the administration of medical benefits. He appeared to consider that the official inquiry now taking place into malingering would end in supporting the demand of the Friendly Societies to control the medical men upon the panels, but it was pointed out in debate that in the House of Commons, when the question was being freely discussed, only 15 members voted for the medical service instituted under the Act being placed in the hands of the Friendly Societies. It will be seen, therefore, that the Conference was not of one mind. Finally, after considering the advisability of pressing for the institution of either a State medical service or a full-time salaried medical service as "the only solution of the difficulty of providing an adequate medical service," the following resolution was unanimously passed: That action be continued to secure the transference to Approved Societies of the administration of medical benefits under the National Insurance Act. The value of the unanimity was much discounted by the speeches in favour of a regimented service, and by the admission in some quarters of the improbability that any such amendment to the Act as was demanded by the resolution would be granted by Parliament.

The Friendly Societies ought to be aware of the strength of the medical opposition to their proposed departure, as it is regrettable that these institutions, so rightly respected for much that they have done, should waste time in futile strivings. We publish in another column a report upon the working of the National Insurance Act at Hull, written on the spot by a special correspondent of THE LANCET. No one can read that report without seeing how fruitless it is for the Friendly Societies to attempt to regain over the medical profession the kind of control which they contrived to secure some 20 or more years ago. At Hull our special representative found that much which has been said since at the National Conference of Friendly Societies was the subject of general conversation among those members of the medical profession and of the public who were taking a thoughtful and personal interest in the working of the Act. It was in Hull considered possible that if the Friendly Societies suffered too much from the rivalry of other bodies, or from the altered conditions of membership, recourse would be had to the foundation of a State medical service. Such a service, which Mr. JOHN LEWINSTEIN, solicitor and clerk to the Hull Insurance Committee, described to our correspondent as an issue to existing difficulties which had to be borne in mind, formed one of the proposals which came before the National Conference of Friendly Societies, as an amendment to the resolution demanding the restoration of the control of the medical officers. It found no general favour. It was doubtful, to begin with, whether the amendment was in order, but in any case it was abundantly clear that the Friendly Societies would regard with considerable apprehension any further extension of the influence of the State in the working of the Act. The position at Hull, as described by our correspondent, thus forms an interesting commentary upon the proceedings at the National Conference of Friendly Societies, and there is every reason to suppose that the position of Hull is comparable in many ways to that existent in other large cities, though every centre of population and industry is found to have its own particular successes and failures with regard to the National Insurance Act.

And why are we so certain that the Friendly Societies can never recover their old domination of the medical profession? Why do we know that never again will an educated body of men put themselves under the thumb of these institutions, however generally useful to the State and virtuous in themselves the efforts of the Friendly Societies may be in the promotion of thrift by combination and fellow-kindness? The answer is supplied by the words of our special correspondent, which are quoted from his articles entitled "The Battle of the Clubs" published some 18 years ago. In 1894, we are reminded, the payment

in Hull made by the Friendly Societies Medical Alliance to medical men in respect of 4000 members for 27,000 consultations and visits was £208, or under 2*d*. per act of service. The memory of such things is not dead. And to those who would rejoice that the time has come for forgetfulness we would point out that neither is the spirit which led to such things dead. The risk of the survival of similar abuses is very real if certain Friendly Societies should have their way. Proof of this is supplied by some words of Brother G. KING, a member of the British Ancient Free Gardeners, as published in the *Daily Telegraph* on Sept. 19th. Brother KING, in seconding the original form of the resolution demanding the transference to Approved Societies of the administration of medical benefits under the National Insurance Act, said pleasantly that "they got far better service when the societies had the management of the medical benefit. It ought never to have been taken away from the societies. It gave them a command over the doctors. They could say to them that if they did not do their work they would give them the 'sack,' but they could not do that at present, although that was what was required in many cases." Brother KING is not alone in spirit.

The Difficulties of Diagnosis.

DURING the proceedings of the International Medical Congress a good deal of stress was laid upon the approaching simplification of medicine, and the proceedings of the Congress were so freely reported in the lay press that there is a chance that the prophetic words of several of the important addresses to the Congress may be misunderstood by the public. Diagnosis does not immediately become a simpler and more perfunctory affair, because we begin to appreciate how many conditions have essential points in common. Indeed, the very reverse may happen. There are few ideas connected with medicine more firmly rooted in the lay mind than the impression that, while treatment may be difficult, diagnosis is easy, or at least that it should be easy to a fully educated medical man. Hesitation to give a name to a condition is sometimes interpreted as an evidence of proper precaution if the practitioner is of middle or more advanced age; any want of cocksureness on the part of a junior member of our ranks may be construed as ignorance or carelessness. The National Insurance Act, we need not here explain how, has a tendency to encourage the habit of slap-dash diagnosis. There are probably more actions at law over errors of diagnosis than over errors of treatment, and, even when an action for maltreatment is brought, the reason suggested for the want of success of the procedures adopted is usually that "the doctor did not understand the case." Indeed, so easy does diagnosis appear to be to the lay mind that many are willing to undertake the treatment themselves on the strength of their own diagnoses.

For success in treatment the diagnosis of a case must be correct, and the recent extensions of medical science have done much to facilitate the identification of different morbid conditions. It is difficult to over-estimate the value in this direction of such a test as that associated with the name of WASSERMANN; when properly applied it will serve to prove the presence of a syphilitic infection with a certainty closely approaching absolute accuracy. Other admirable tests exist, depending on the presence in the serum of the patient of substances recognisable in one way or another. The detection of pathogenic microbes in the tissues and in the fluids of the patient is, of course, the supreme advance in modern times towards accuracy of diagnosis. Here we have assistance of a far-reaching sort, for we are not limited to the visual appearances of the micro-organism. By the action of the germ towards certain stains, whether it retains them or not, we may be able to decide, often with absolute certainty, as to the identity of the organism. Still more, when the germ has been implanted on a nutritive medium or in a susceptible animal the results produced will help greatly in the identification of the condition present. The introduction of the X rays has done much to render more simple the diagnosis of injuries and other abnormal conditions met with in connexion with the bones and joints, and the modern surgeon has in radiography a powerful friend in many directions. To some extent the value of microscopy and bacteriology in diagnosis is understood by the public, who, however, do not see that even with these valuable adjuncts much uncertainty may be present, at any rate in the early stages of disease, and it is exactly here that correct diagnosis is of particular importance. The very existence of such a name as the pseudo-diphtheritic bacillus shows that there are non-pathogenic bacteria which bear a very close resemblance to the true germs. The additional information afforded by the skiagram must be rightly estimated by the surgeon, for it is not at all difficult to misinterpret what the X rays show, and the particular aspect from which the skiagram has been taken may hide a lesion. A skiagram some months later may reveal a fracture that had been undetected at the time, and the consequences of such an occurrence are sometimes serious.

It is, however, to symptoms and signs that the medical man must trust for the most part for the identification of the morbid condition present. As yet, at any rate, clinical experience comes first, however admirably reinforced we may be by the physician-pathologist. Some symptoms and physical signs are very definite, of the two physical signs being more trustworthy than symptoms; and it might be thought that a diagnosis founded on them must be substantially exact. But experience has shown that implicit reliance on these indications of disease may lead to great errors, and numerous little books have been written to assist the young surgeon in difficult positions. The mind of the follower of medicine too readily strains after pathognomonic signs and symptoms—signs or symptoms which are absolutely indicative of definite diseases—and it would not be difficult to collect a number of manifestations which at one time or another have been put forward as certain indications of particular diseases, later experience having shown that unjustifiable reliance has been placed on them. Closer observation proves that even the most trustworthy of these pathognomonic signs may be the result of some disease other than that with which it is usually associated, so that sometimes the diagnosis may become difficult and the physician may be misled. Points of

difficulty in diagnosis are regularly published in medical journals and explained to medical students as their existence becomes verified, and we need only refer to them in the briefest way. A fair number of cases have been recorded in which an acute affection of the lungs has been mistaken for acute abdominal disease. In some cases of pneumonia the most striking manifestation of the disease has been an acute, sharp pain in the abdomen, and this, when combined with a raised temperature and a quickened pulse, has suggested the presence of appendicitis, of perforation of a gastric ulcer, or of some other acute abdominal condition. So exact has been the simulation that in some cases the surgeon has been induced to explore the abdomen, with the result, mortifying if sometimes reassuring, that no abdominal lesion has been found. The increase in the rapidity of the respiration might arouse some suspicion of a mistake, but rapid shallow breathing is a recognised symptom of acute abdominal affections, for the abdominal respiration may cease completely. That a careful examination of the chest would reveal the truth in such cases is not perfectly certain, for in early pneumonia no physical signs of that condition may be present. The most difficult cases to diagnose are those in which two entirely separate lesions are present, each with its series of symptoms; in such a case the combination of signs and symptoms may lead astray even the most careful diagnostician. Time alone can solve these mysteries; sometimes even the true solution cannot be found until the performance of a necropsy, which is at best a barren triumph of detection,

Now that notification of infectious diseases is compulsory there is no little risk that a medical man may be unjustly fined for not notifying a case, when in fact he was unable to make a diagnosis. Not long ago this actually happened, for a medical man was summoned for not notifying a case of small-pox, and in spite of his assertion that he had not been able to recognise the disease at so early a stage the fine was inflicted. Only those who have been compelled to act in such situations can appreciate the difficulties of having to decide on the nature of one of the acute specific fevers in an early stage of the disease; yet the public has but scant sympathy for such difficulties. The inability to give a diagnosis in a difficult case is no real sign of a want of knowledge. Of course, it may happen that a little more experience enables one medical man to recognise a disease, the nature of which another may have missed from want of some special information. But the more experienced and the more learned may for their part find a difficulty in diagnosing a disease, while one with less knowledge may promptly give it a name. The hesitation which comes from knowledge and that which comes from ignorance appear exactly alike to the lay mind. Under the National Insurance Act the professional conduct of medical men may come under lay review. What our fellow citizens will have to appreciate is that it is easy, when the case has become clear, to blame those who failed to recognise it at an earlier stage, but that the difficulties of diagnosis are then over. Those who have had most experience will be the first to acknowledge how difficult diagnosis may be.

Annotations.

"Ne quid nimis."

THE MEANING OF "DEATH-RATES."

IT is common for places with low death-rates to make the most of the fact as evidence of their healthiness, and the figures are apt to be sometimes accepted without sufficient consideration of their true significance. Usually the rate given is the "crude" rate; that is, one which should not be compared with the death-rates of other parts of the country without applying a factor of correction for the age and sex distribution of the population concerned. When the factor has been obtained and applied the "corrected death-rate" is that which the place would have shown had its mortalities at different age groups held good for the whole country—i.e., for what is termed the standard population—and it is therefore comparable with the death-rate of any other place which has been corrected by the same method. But the corrected death-rate in many cases is far from being itself a figure which can be regarded as indicating the real mortality of the population considered. There are towns, for example, whose corrected death-rates are as low as 12 per 1000 of the population, or even less. A population of 1000 with only 12 deaths a year would have an average age at death of 83 years, a result the absurdity of which has to be explained by recalling that the standard population is not a stationary but an increasing population—one in which there is, more or less consistently, a smaller number of persons living as old age is approached, in the period of life when mortality is high, than there would be in a population in which the birth-rate and the death-rate were equal. To meet this difficulty it is usually considered necessary to resort to a life table, and in this way to construct a stable population which possesses the same mortalities at each age as those in the population to be examined. By this means irregularities in the proportions of persons of different ages and sex, due to varying birth-rates and to immigration and emigration, may be eliminated. Generally the death-rate of any population, either "crude" or "corrected," will not be that of the life table; usually it will be below the latter, though exceptionally it may be equal to or above it if the death-rate of the place is high enough to annul the natural increase and to bring about a stationary or a declining population. Dr. John Brownlee has lately discussed these questions,[1] and refers to the practical difficulty in most populations of securing the labour and mathematical skill necessary for life-table construction. Dr. Brownlee points out, however, that by the application to local statistics of data obtained from various life tables now available it is possible to obtain a working series of "true death-rates" if the corresponding "corrected" death-rates are known. For this purpose he has utilised 12 different life tables issued at various periods, and indicates a method, to be developed in subsequent papers, for determining the "true death-rate" from the corrected death-rate by multiplying by a constant fraction and adding a definite constant. It would seem that by this method results are arrived at which show comparatively negligible differences between the theoretical and real values. Without attempting here to consider the mathematical questions involved it may be said

[1] Journal of Hygiene, The Relationship between "Corrected" Death-rates and Life Table Death-rates, vol. xiii., No. 2, July 31st, 1913, p. 178.

that an accepted calculation of this nature would be of great practical use, and its application to typical populations should give very instructive results.

THE TITLE OF THE POPE'S BODY PHYSICIAN.

MEMORABLE in all its sections for the papers contributed and discussed, the recent International Congress of Medicine and Surgery has established a famous precedent for succeeding Congresses in the department of medical history, so varied were the subjects introduced, so ably were they handled, so fresh were the facts brought to light, so interesting the conclusions arrived at. The "Epitaphial Titles of the Early Christian Physicians in the Catacombs of Rome" was the theme of the Italian delegate, Dr. Pietro Capparoni, and his treatise—for such it really was—now accessible in printed form to the lay world at home and abroad, will give a powerful stimulus to research in a branch of archæology hardly more interesting to the philologist and the theologian than to the student of social history in its relations to medicine. In the third, fourth, and fifth centuries of our era Christianity made steady progress among the cultured classes, in none more than in the practitioners of the healing art, who seem to have taken over the functions discharged by the priest in temple worship and to have consecrated them to the propagation of a purer and nobler faith. Attached to the "congregations," if such they may be called, which met for divine service, more or less clandestine, in the catacombs in and around Rome, these physicians, mostly of Greek origin and training, so endeared themselves to their *clientèle* as to earn sepulchral honours in greater number than any other members of the Christian sect—a series of memorials which Dr. Capparoni classifies: first, as taking the form of pictures ("Pitture cimiteriali"); second, of tombstones without inscriptions ("Pietre tombali anepigrafiche"); third, of tombstones with Greek, and fourth, of tombstones with Latin, inscriptions. His account of each of these has a pathos of its own, to say nothing of its religious or professional significance, forming, indeed, a sympathetic commentary on that beautiful romance of Cardinal Wiseman, "Fabiola," which, widely diffused in four continental languages, is still the most impressive illustration of the upward movement of the Christian faith from its subterranean haunts to its culmination in the spacious church and the princely basilica. Many sidelights Dr. Capparoni gives us on the organisation of medical relief in the *valetudinaria* (infirmaries) of ancient Rome, a word gradually replaced by its Greek equivalent νοσοκομεῖα, according as the Hellenic advance of the healing art revealed itself in the nomenclature, therapeutic and administrative, of the profession, till we come to the title assumed by its head when attached to the person of the supreme ruler of the State and thereafter to that of the supreme pontiff himself. Archiatrus, or ἀρχίατρος, the title in question, Dr. Capparoni finds first officially bestowed upon Andromachus, as body physician of Nero, though previously it served as an honorary appellation of any eminent consultant. Galen, indeed, applies it to Andromachus as to other high-placed physicians, but, as a Greek coinage, it did not pass into Latin usage till comparatively late, and then only to distinguish the body physician attached to the Imperial Court. Up to the Constantinian epoch it was thus restricted, and thereafter it appears in the form "Archiatrus Sacri Palatii." By this time its possessor enjoyed great privileges, as well as immunities. He might assume the style of Count of the first and of the second order, and aspire to superior posts, even to that of proconsul and of prefect of the praetorium. In addition to these, the Archiatrus Sacri Palatii was clothed with judicial authority in settling disputed points in medical etiquette and in delegating to subordinates, also called Archiatri, the control of municipal practice so as to secure medical treatment to all the inhabitants of the two imperial cities, Byzantium and Rome. Of these latter functionaries, there was one for each of the 14 *regiones* of Rome and one for each of the seven of Byzantium. For his maintenance each could draw upon the "annona militaris," while not only he himself, but his wife and children were exempted from the payment of taxes. He had, in consideration of these privileges, to provide for the gratuitous treatment of the poorer citizens, and to instruct in the healing art those sons of poor freedmen who aspired to a medical career. In immediate dependence on the prefect of the city, this type of archiatrus was chosen by him for preferment to a vacant post, being appointed to it from among other candidates when there was an absolute majority of votes in his favour—votes given by his colleagues assembled by the prefect *ad hoc*. Even then the appointment was not ratified till after special approval by the emperor. Once installed, he was prohibited from accepting promises or bequests from patients *in extremis*. Besides the 14 "Archiatri regionales" in Rome, two others bore the title—to wit, the physician of the Vestal Virgins and the physician attached to the Porticus Xysti. Gradually, as the empire of the west and that of the east declined, and with them the institutions, civic and professional, peculiar to their organisation, the title died out with the system under which it had originated and developed; till, in Rome itself, the assumption of the Temporal Power by the pontificate made the Pope a king as well as supreme pontiff, and the physician attached to his person remained the only representative of the "Archiatrus Sacri Palatii," dating from imperial times. A note in these columns last week showed that in the Middle Ages the appointment as a personal one had already lapsed, and no medical consultant in city or suburb, or indeed throughout Italy, now takes the title—relic and reminiscence as it is of a post of which the wearer of the Triple Crown is but the restricted inheritor. Such is the history of the word "archiatra," traced with a sure-footed *indagatio* by Dr. Capparoni, and illustrated, in its earlier stages, by a series of sepulchral inscriptions, in the deciphering and interpretation of which he is a recognised authority.

TREATMENT OF AMŒBIC DYSENTERY BY IPECACUANHA ENEMATA.

THE value of ipecacuanha in amœbic dysentery is borne out by the remarkable success of the treatment by subcutaneous injections of its active principle emetine, introduced by Professor Leonard Rogers, of Calcutta.[1] At a meeting of the Société Médicale des Hôpitaux of Paris on July 25th M. Maurin reported a case in which he obtained rapid cure from ipecacuanha in enemata. It is curious that though ipecacuanha has been long used in dysentery, and though amœbicidal drugs, such as quinine, permanganate of potassium, and nitrate of silver have also been much used in the form of enemata, ipecacuanha does not appear to have been previously used in this manner, or if it has the use has been limited to a few cases. In the case now reported the patient was a man, aged 25 years, who was admitted into the Hotel Dieu of Clermont-Ferrand on April 12th, 1913, suffering from dysentery which began at the end of the previous December. He was passing daily 15 to 20 sanguineous and glairy stools. He had been treated without effect by dieting and administration of sodium sulphate. He had spent two

[1] See THE LANCET, June 28th, 1913, p. 1803.

years at Saigon in an infantry regiment, but did not suffer there from diarrhœa, fever, or any affection of the liver. Two months after returning to France the dysentery began. On admission he weighed only 64 kilogrammes, and he had lost 12 kilogrammes since the beginning of his illness. Pressure over the descending colon was very painful. A diet of milk and soups and a draught containing 6 grammes of bismuth and 20 drops of laudanum, and an enema consisting of a decoction of 4 grammes of ipecacuanha in 200 grammes of water were given daily. On April 19th, the fourth day of this treatment, the stools, though of the same character as before, fell in number to five in the 24 hours, and the distressing tenesmus was no longer present. On the 21st the patient passed for the first time in five months a "fæcal stool" consisting of brownish fluid matter and also a small glairy stool. On the 22nd and 23rd a single diarrhœic stool streaked with mucus was passed. The draughts were discontinued. On the 24th and 25th there was absolute constipation. On the 26th and also on the 27th two diarrhœic stools without mucus were passed, on the 28th there was constipation, and on the 29th and 30th a solid stool was passed. From this time one or two stools, diarrhœic or solid, usually the latter, were passed daily without any mucus. However, as a safeguard, the ipecacuanha enemata were continued until May 2nd. On May 24th the patient was discharged cured and weighing 72 kilogrammes. Although bacteriological examination was not made amœbic dysentery was diagnosed—a view confirmed by the rapid action of the ipecacuanha. In spite of the late appearance of the disease it evidently was contracted in the colony. M. Maurin claimed that he had obtained as good a result as is given by subcutaneous injections of emetine. He explained the frequent failure of ipecacuanha given by the mouth to the fact that the emetine does not reach the seat of the disease in sufficient quantity to destroy the amœbæ. When administered by enema, on the other hand, the remedy is brought directly into contact with the disease.

MEALS.

IT has often been remarked that more people suffer from eating too much than from drinking to excess. With the present laudable and ever-progressing diminution in the consumption of alcoholic drink the proposition tends to become true; formerly, no doubt, it was a purposely exaggerated statement put forward as a rule either to enforce a warning to dyspeptics or to excuse intemperance by a *tu quoque* argument. The unfortunate fact under our present social conditions is that, while many persons suffer because they eat too much, a great many more suffer because they eat too little. Were the entire food-supply of the world equitably distributed the labours of surgeons and physicians alike would be sensibly reduced, but in the meantime those who eat too much are as frequently the care of medical men as are those who eat too little. This is not because they need the care more, but because they belong to the classes who can obtain it always, while the compulsorily abstemious cases can only be helped by social and legislative means. But if those who eat too much can generally command medical help they are not necessarily always benefited by it, for too often they make what is known as "bad patients." The victims of excess or of deprivation can be relieved by treatment, but the advice must be carefully followed, and neither patient necessarily does this. The medical man has some chance of being obeyed when he advises a man who is well-to-do to omit one meal per diem, but complete obedience is not the rule; it is little use his advising an extra meal a day to the man whose poverty prevents him getting the nourishment he needs. In the case of the man who eats too much, and equally in the case of the man who cannot obtain more than two meals a day, it is suggested, we have read recently, that the meal to be sacrificed should be breakfast. The reason offered for this belief is that after the night's sleep the bodily strength, nervous and muscular, is at its highest, and work can be carried on without food. The machine is running strongly, and no fuel is required for the time being. There would appear to be good foundation for such belief, and yet in this country at any rate we believe very few people act upon it. How many men are in the habit of doing any work before they have breakfasted? Very few we imagine. Yet, as the evidence of some literary men proves, there is no time of day more fitted for the production of intellectual or imaginative work than the early morning hours, which, quiet and refreshing, are friendly to brainwork, breakfast or no breakfast. For manual labour the no-breakfast plan is not so suitable. A little fresh air exercise to start the day, following the habit of some athletes in training, is a thing that many a professional or business man might cultivate with advantage. We do not think, however, that he will be disposed to omit breakfast before entering on the day's work, nor can we encourage him to do so. But we are convinced that his breakfast should often be lighter than that of the average Englishman. There is a great deal to be said in favour of the "coffee and rolls" plan, and for men whose day is spent in work which taxes the brain and nervous system generally more than the muscles, the wise course is to relegate anything approaching a hearty meal to the period of relaxation, the evening. But that part of the continental system which involves the eating of a heavy lunch is as objectionable as our own heavy breakfast plan. It can be excused only if adequate time is given after the meal for the digestion thereof, and most professional and business men cannot spare the hour's ease which should follow a hearty midday meal. In most continental cities where the midday meal is a heavy one an hour or so is commonly spent in smoking and chatting afterwards. This leisurely proceeding, however, is not possible with the more strenuous business habits of England and America, as the "quick lunch" institution testifies. Nor need the quick lunch be severely deprecated if the quantity of food ingested is reduced in accordance with the time taken for its consumption. If the quick luncher is also a heavy luncher then he combines the evil properties of both the continental and English methods, and will doubtless incur the punishment of the dyspepsia which his habits invite. But if the meals during the day be light we do not think that the worker need be asked to forego either his breakfast or his lunch.

STRUCTURE OF THE ERYTHROCYTES.

IN the September issue of the *Medical Chronicle* Dr. E. M. Brockbank records some experiments which may throw light on the minute structure of the red corpuscles of the blood. The method employed was the exposure of a film of blood, fixed on a microscope slide, to the action of pepsin and hydrochloric acid, and different results were obtained according to the degree of dilution of the acid constituent. If the acidity is approximately 0·01 per cent., the erythrocytes are seen almost immediately to emit amorphous brownish granules containing their hæmoglobin element, these granules being soluble in acid alcohol and in weak solutions of sodic hydrate. The granules are of considerable bulk, too voluminous, indeed, to consist of hæmatin alone, and may perhaps be formed of a compound of this substance with lecithin. If a rather weaker acid solution is used, such as 0·005 per cent., a rough appearance

is produced in the corpuscles, and they are subsequently found to be resistant to the action of the stronger solution used in the former experiment, and no granules are extruded under its influence; while if an intermediate acidity is employed a distinct phenomenon, called by Dr. Brockbank "ballooning" of the corpuscles, is noticeable. In this case colourless translucent globules are thrust out from the corpuscles, or the whole cell may swell up into a balloon four or more times the original diameter, as if distended with some clear fluid. Living corpuscles under the influence of heat or of mechanical violence may coalesce, like soap-bubbles or oil-globules, into larger masses, while in certain conditions part of their substance is extruded to form the platelets of the blood. As the result of his observations Dr. Brockbank concludes that the erythrocyte possesses, outside its true envelope, an outer layer of protective structureless material, which is removed by the stronger acid solution, but is altered in some way by the weaker dilution of acid pepsin, so as to become more resistant. Within this layer the true envelope is itself without visible structure and is capable of coalescing with the covering of other corpuscles to form large masses. It may also under suitable conditions expand to a large extent owing to internal distension. The interior of the corpuscle consists of a simple cavity, not of a sponge-work, from which the internal contents may be extruded to form blood-platelets, but it is noteworthy that after this operation the remains of the corpuscle still stain well with eosin, not having seemingly lost their hæmoglobin. Dr. Brockbank suggests that this last substance is bound to the shell of the erythrocyte by lecithin or some similar body, the combination breaking down under the influence of peptic digestion or in the presence of water, for which hæmoglobin has very great affinity. These suggestions are novel if not revolutionary and will probably meet with considerable criticism. Certainly the experiments on which they are based will require to be repeated by others, and more stringent proof will be needed before we can accept the view of erythrocytes as hollow bags rather than, as usually taught, spongy bodies containing hæmoglobin in their network.

CONTEMPORARY MEDICAL THOUGHT.

IT is the place of international congresses to deduce from a comprehensive survey of work in more limited fields common principles of action for universal application, viewing the results of such work from the heights, as it were, whence their local conditions can be observed in proper proportion. Perhaps no congress has more conspicuously fulfilled these requirements than the International Congress of Medicine recently held in London, a fact which has been indicated by the reports in our columns and which has been admirably and perspicuously brought out in an article by Professor J. A. Lindsay in the current issue of the *Nineteenth Century and After*, entitled "The Main Currents of Contemporary Medical Thought." The significant features of the Congress are summarised by Professor Lindsay as follows: first, the seal which the hand of time has affixed to the name and fame of Pasteur and Lister. "Whatever developments," he says, "may await medical science, it is certain that the work of Pasteur and Lister will never be undone or need to be done over again." Another gain was the evident *rapprochement* between medicine and surgery, too long divorced, the set of the tide towards a general appreciation of "the correlative and complementary point of view, when the physician thinks surgically and the surgeon thinks medically." Again, the recognition of the expanding field of medical thought and action, and the enlarging responsibilities of the medical practitioner, so well characterised in the discourses of Dean Inge and Bishop Ryle, is adduced by Professor Lindsay, not the least of which is the constantly increasing recognition of the fact that "behind the wounded limb or the diseased organ there lie 'the abysmal depths of personality.'" Other widening fields of contemporary medical thought are found in the infective hypothesis, the increasing significance of internal secretions, the results of the study of parasitology, and the important though at present unsettled and obscure subject of anaphylaxis. The growing importance of genetics, if guarded by a proper appreciation of its limitations, which was handled in so masterly a manner by Professor Bateson, is a clear gain, even though "tentative advance, a disposition to compromise, an eye to practical results, a tincture of pragmatism," seem to dominate British methods of reform rather than "a careful sifting of evidence, a clear enunciation of doctrine, and a fearless application of principle." Allied to this is the recognition by the Congress of the importance of a public recognition of the nature and far-reaching effects of venereal disease. The achievements of preventive medicine, so well set forth by Mr. John Burns; the increase of insanity; the method of psycho-analysis—though not restricted, as it is by its originator, Professor Freud, to the facts of sexual history; the recognition of the importance of the history of medicine; the resuscitation of confidence in medical therapeutics; and, finally, the emphatic pronouncement upon the need for freedom of experimental inquiry and the dangers of undue legislative interference, are all brought before the public by Professor Lindsay as evidencing the essential unity and solidarity of medicine. That these lessons are not likely to fall on deaf ears may be confidently hoped from the unexampled activity of the lay press in providing such detailed and accurate accounts of the proceedings of the Congress. For the lay press is on the whole a fairly accurate mirror of the receptive attitude of the public mind, and that being so we can but rejoice that it is at last directed to an interest in contemporary medical thought. A dwelling of the uninstructed mind on isolated details of medical practice has always, and rightly, been discouraged by the medical profession, but an intelligent appreciation by the public of the established universal principles of medical science will undoubtedly be heartily welcomed by it.

THE ITALIAN LANGUAGE AT THE INTERNATIONAL CONGRESS.

IT appears that there has been some misunderstanding with reference to the use of Italian at the recent International Congress of Medicine, and that the scientific and political press in Italy have been animadverting on the point that Italian was not accepted as one of the official languages. To a recent letter on this subject in the *Corriere della Sera* Professor Felice La Torre, delegate of the commune of Rome, has replied on Sept. 4th, calling attention to Circular IV. of the Congress re-issued in January, 1913, in which it is stated that: "The official languages are English, German, French, or Italian. Anyone wishing to speak in other languages may do so provided that a member of the Congress will translate the sense of his remarks into one of the four above-named languages." It has been hinted that at one time the Italian Government refused to take part in the Congress and send official delegates because the circulars were issued in three languages only—English, French, and German. It is easy to understand that the number of languages used for circulars and official information has to be strictly limited, otherwise the amount of clerical work involved would become endless and impossible. Moreover, this question has been settled by the International Committee of the Medical Congress and must be adhered to by whatever country it is which temporarily receives the

Congress. This seems to us an eminently practical procedure, for French is a language understood by scientific men of all the Latin races and by Russians and other Slav nationalities. However this may be, it appears that before the opening of the Congress the Italian Government were satisfied that there had been no slight or oversight with regard to the "dolce lingua" of Dante, and gave effect to their satisfaction by appointing as official delegates Professor Bianchi, rector of the University of Naples, member of Parliament, and two distinguished officers connected with the medical service of the Royal Army and Navy.

ACUTE ANGULATION OF THE TERMINAL ILEUM AS A CAUSE OF INTESTINAL OBSTRUCTION AFTER OPERATIONS FOR APPENDICITIS.

IN the *Boston Medical and Surgical Journal* of May 15th Dr. David Cheever has recorded three cases of a dangerous complication which may occur after operations for appendicitis—intestinal obstruction from acute angulation of the terminal ileum. This condition must be distinguished from the post-operative obstruction which is due to intestinal paralysis, but the diagnosis between the two may not be possible before re-opening the abdomen. Mechanical obstruction following operations for appendicitis may be due to various causes—kinks, twists, or adhesions. In consequence of its proximity to the appendix the terminal ileum is most involved in the inflammation, and therefore is the most usual seat of adhesions and obstruction. The following is an outline of the three cases. A girl, aged 7 years, was admitted to the Boston City Hospital on Dec. 8th, 1906, with a history of abdominal pain and vomiting for two days. She presented the usual clinical picture of spreading peritonitis of the lower abdomen. Incision behind the right rectus revealed free pus in the right iliac and hypogastric regions and in the pelvis. The appendix was acutely inflamed, hanging over the pelvic brim, and adherent to the lateral wall of the pelvis. The tip was perforated and reached the pelvic floor. The appendix was removed and cigarette drains were carried to the right iliac fossa and pelvis. The patient progressed favourably until the fourth day, when distension, constipation, and vomiting appeared. The wound was explored hastily and fruitlessly, owing to the patient's condition, and ileostomy was performed through a small incision in the left linea semilunaris. The artificial anus tided over the crisis, and on Jan. 1st a loop of terminal ileum adherent in the pelvis and containing the artificial anus was excised, and end-to-end anastomosis was performed. Recovery ensued. In the second case a man, aged 24 years, was admitted on March 6th, 1907, with a history of abdominal symptoms for three weeks, becoming acute during the last two days. The abdomen was tender, dull to percussion, and rigid in the right iliac and hypogastric regions. Incision showed free turbid fluid and a gangrenous appendix in the pelvis. This was removed and the infected area was drained. The patient showed marked toxæmia, but rallied and did well for three days. Then vomiting and distension appeared, and enemata failed to relieve. Time was thus wasted, and a final ileostomy did not avert death. Post-mortem examination through the wound showed that the terminal ileum was adherent and sharply angulated in the pelvis. In the third case a girl, aged 18 years, was admitted on the fourth day of an attack of acute appendicitis. The whole lower abdomen was rigid and tender, especially on the right, where a mass was felt. On opening the abdomen through the right rectus a free turbid exudate was found with an incompletely walled-off abscess occupying the right half of the pelvis and right iliac fossa. The appendix was semi-necrotic, perforated, and adherent to the wall of the pelvis, and its tip was adherent to the pelvic floor. The appendix was removed and the infected area was drained in the usual way. Although very ill, the patient rapidly convalesced, and good actions of the bowels occurred. On the sixth day pyrexia and other symptoms suggested a residual abscess, but this was not confirmed by digital examination. Distension began, but enemata gave some results. Time was wasted in palliative measures. On the eighth day vomiting began and the abdomen was reopened. The terminal ileum was found adherent along the track formerly occupied by the appendix and acutely angulated at the floor of the pelvis. The adhesions were separated, the ileum was freed. The patient left the table exhausted and died in 12 hours. Dr. Cheever thinks it was unfortunate that the diagnosis of obstruction was not made earlier and that ileostomy was not performed. The mechanism of the complication present in these cases appears to be as follows. Studies on the cadaver and bismuth radiograms show that in the majority of cases the terminal coils of the ileum occupy the pelvis. Traced backward from the cæcum the ileum runs downwards against the right aspect of the pelvic wall, to its floor if the length of the mesentery permits, and then partially fills the pelvis, thus forming a potential kink at its lowest loop. If then an inflamed appendix lying in a mass of exudation along the pelvic wall is removed there remains a bed of adhesive lymph against which this terminal loop of ileum lies. The conditions are favourable for the formation of adhesions, especially if the post-operative paresis of the intestines is marked. To prevent this complication Dr. Cheever now introduces a flattened rubber drain over the appendix bed, between the pelvic wall and the ileum. He has done this in 12 cases presenting conditions similar to those described above and has not encountered post-operative obstruction, but the number is too small to draw any conclusion. With regard to treatment, when an inflamed appendix has been torn from its bed on the lateral pelvic wall, the earliest symptoms of obstruction, especially if appearing after an interval of a few days, should lead to the diagnosis of acute angulation of the ileum, and a secondary operation should be performed for removal of the obstruction. If the patient's condition does not justify this, ileostomy should be performed.

THE DUTIES AND EMOLUMENTS OF MEDICAL OFFICERS OF HEALTH.

THERE have been during recent years so many additional duties imposed by Parliament and the Local Government Board upon medical officers of health which have not resulted, in the great majority of sanitary areas, in any increase in the salaries paid to these officers, that it is surprising to find local authorities endeavouring to still further increase these duties and at the same time curtail the emoluments. Such, however, appears to be the case in certain areas in Essex. The resignation of the medical officer of health to the Chelmsford and Maldon rural districts has led to a joint area being formed, comprising the above-mentioned and a third, the Rochford rural district. When the Chelmsford and Maldon appointment was made the salary paid was £600 per annum; now it is proposed that an officer be appointed to a combined district with 50 per cent. larger population and area and at the same salary, £600. The officer to be appointed will also have to act as water analyst and bacteriologist, and provide any office, laboratory, and assistance he may require, and for this he will receive the sum of £50 per annum. He is expected to provide a motor-car or motor-cycle and defray all his travelling expenses. To provide a laboratory which would be of any real use would entail an expenditure of £100; rent, rates,

maintenance, and depreciation would probably cost £100 per annum and a motor-car £150. The net salary, therefore, cannot greatly exceed £400, and for this sum a district with some 60,000 population spread over an area of 220,000 acres has to be served. No doubt it is desirable that medical officers of health should have some knowledge of practical chemistry and bacteriology, but it should be remembered that an officer cannot both be spending his time in the laboratory and attending to his other and generally more important duties. Moreover, most laboratory work requires to be done when epidemic diseases are most prevalent—that is, just when there is least time to spare for such work. On the whole, it seems desirable that chemical and bacteriological work should be done in properly equipped and staffed laboratories, such as many county councils have provided and which others should provide, since it is quite certain that in a district such as has been referred to above the medical officer of health will find quite sufficient to do without having this additional work thrust upon him. Sanitary authorities generally do not seem to be aware that the analysis of water is not a duty imposed upon the medical officers of health by the Local Government Board. As a rule, however, the Board does not appear to object to them undertaking such work, nor does the sanction of the Board appear to be required to such an arrangement between an authority and its medical officer.

THE TREATMENT OF LEPROSY BY CHAULMOOGRA OIL.

THE treatment of leprosy remains, in the majority of instances, extremely unsatisfactory notwithstanding the fact that numerous remedies at one or another time have been confidently put forward as cures for the malady. No method of treatment, however, has so far entirely realised the bright anticipations of sanguine originators. Even sera and vaccines from which much has been expected seem still to be in the experimental stage. Among the many drugs which have received an extended trial in leper hospitals and which have appeared at least to ameliorate the leprous condition in some cases, chaulmoogra oil occupies a prominent place. This oil is obtained by expression from the seeds of some species of gynocardia, and has been employed both internally and as an external application. Scheube, in his classical work on the diseases of tropical countries, states that this remedy is identical with the Tai-fuchi, which has acquired a very high reputation among the Japanese as a remedy for leprosy. Chaulmoogra oil when administered by the mouth is apt to give rise to nausea and other symptoms, but fortunately it can be administered in the form of hypodermic injections. In our American contemporary, *Public Health Reports*, for Sept. 5th a very interesting note is published regarding the apparent cure of two cases of leprosy by the use of chaulmoogra oil in the San Lazaro Leper Hospital, Manila, by Dr. Victor G. Heiser, Director of Health for the Philippine Islands. One of the cases had been an inmate of the leper hospital for four and the other for three and a half years. When admitted both presented typical appearances of leprosy, and B. lepræ was found in scrapings taken from the lesions on the face. At first they were treated by chaulmoogra oil administered by the mouth, but in both instances this gave rise in a short time to gastric disturbances so that the treatment had to be continued by means of injections of the oil combined with camphor and resorcin given hypodermically. In a comparatively short time improvement was noted, and gradually the lesions healed. In June, 1913, careful and prolonged clinical as well as microscopical examinations failed to detect any evidence of the presence of leprosy in either case, and they were accordingly discharged from the leper hospital on probation. It is proper to mention here that immediately after their admission both patients had for a brief period received vaccine treatment, but whether this had any influence upon the subsequent improvement that occurred Dr. Heiser is unable to say. He mentions, however, in this connexion that there are at the present time in the San Larazo Leper Hospital "a number of other cases" which have for the last 22 months presented only negative evidence as regards leprosy, though all of them had exhibited typical lesions when the treatment with chaulmoogra oil was begun. The definite progress which these cases have made towards apparent cure cannot be attributed to any vaccine treatment since they had none. We have had occasion before to draw the attention of our readers to the fact that in some cases of leprosy under no form of special treatment marked improvement appears to occur spontaneously and unaccountably. It might be argued that the two cases described by Dr. Heiser were of this nature, but we are inclined to think that they were not; especially in view of the number of other cases which seem to be on the way to recovery after the same treatment by chaulmoogra oil. Obviously we must before coming to a definite opinion wait for further details about the latter group of cases, and for this reason we shall look forward with much interest to Dr. Heiser's next communication upon the subject. It is possible that chaulmoogra oil, alone or in combination with other remedies, acts more efficaciously when injected hypodermically than when administered by the mouth.

THE Harveian Oration will be delivered at the Royal College of Physicians of London by Dr. J. Mitchell Bruce at 4 o'clock on Saturday, Oct. 18th.

THE Metropolitan Water Board, having contracted out of the National Insurance Act, are arranging for the medical treatment of their employees, for which purpose they require district medical officers. The announcement of the Water Board in this connexion will be found in our advertising columns of last week.

WE published in our issue of August 16th a report of the Permanent Commission of the International Medical Congress, which included among the gazetted recommendations of the committees for awarding of Congress prizes the award of the Hungary prize to Sir Almroth E. Wright for his work on anaphylaxis. The statement was made in the official publication of the Congress, but was an error in wording. The prize was awarded for Sir Almroth Wright's splendid researches on immunity and vaccine therapeutics.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—The opening of the seventy-ninth winter session will take place on Wednesday, Oct. 1st, at 3 P.M. The introductory address will be delivered by Mr. Sampson Handley, F.R.C.S., after which Sir Squire Bancroft will distribute the prizes. The annual dinner of past and present students and their friends will be held the same evening at 7 P.M. precisely at the Trocadero Restaurant, Sir James Kingston Fowler, K.C.V.O., being in the chair.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The opening of the winter session will take place on Wednesday, Oct. 1st, at 4 P.M., Mrs. E. Garrett Anderson, M.D., President of the School, being in the chair. The introductory address on "The Medical Needs of India" will be delivered by Director-General Sir Charles P. Lukis, K.C.S.I. Light refreshments will be served.

ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR IRELAND FOR 1912.

THE General Register Office in Ireland was established half a century ago, the first annual report of the Registrar-General having been published in 1864. The present report, the appearance of which was announced in a recent issue,[1] is the forty-ninth of the series, and deals with the registration of births, deaths, and marriages in the year 1912. The Registrar-General, Sir W. J. Thompson, has shown great energy and ability in the conduct of his department since his assumption of office. In every important detail he has followed in the footsteps of his predecessor, Dr. Thomas Grimshaw, to whom preventive medicine is indebted for his successful method of determining the true mortality prevailing amongst the various social grades in a large urban community.

Statistics.

In the volume before us, which runs to 180 pages, the usual tables are given showing the movement of the population in recent years. From this it appears that the births in the year 1912 exceeded the deaths and emigrations together by 1102, which number represents the increase of the population of Ireland as compared with the estimated numbers in the preceding year.

The death-rate in the whole of Ireland was the lowest recorded since the year 1871; it was 16·46 per 1000 living, and was below the average rate in the previous decennium by 0·83 per 1000. The mortality varied greatly in the several areas, the proportions varying from the lowest 12·2 in Kerry County and 13·5 in Mayo to 18·1 in Monaghan County and 18·7 in Armagh. Of the total deaths registered in Ireland 13·8 per cent. occurred in workhouses or workhouse hospitals; the percentages thus returned varying in the several provinces from 10·1 in Ulster and 10·3 in Connaught to 16·0 in Leinster and 19·1 in Munster. Among many useful tables which have been continued from previous reports we welcome Table VII., which shows in 18 definite groups the occupation or social position of all persons dying in the Dublin registration area during the year under notice. The usual columns are appended showing the death-rates by ages and causes and the proportion of deaths occurring without medical care. This table forcibly illustrates the effect of occupation on mortality. Thus we learn that whilst among families of the middle class numbering more than 100,000 the death-rate barely exceeded 14 per 1000, it was equal to 23 per 1000 among car-drivers and to 27 per 1000 among the hawkers, porters, and labourers, who constitute one-fourth of the Dublin population. The official records at Charlemont House, from the early days of Dr. Grimshaw to the present time, are available for reference, and furnish a trustworthy standard by which the effects of sanitary and social progress in future years may be measured.

In Ireland the proportion of deaths registered as uncertified—i.e., as having taken place without medical care—is still enormous. Although the proportion is slightly decreasing, it was equal to 23 per cent. of the total deaths in the year 1912. Both in England and Scotland the deaths returned as uncertified in the same year were less than 2 per cent. In the province of Leinster the proportion of uncertified deaths was 16 and in Ulster 18 per cent.; whilst in Munster it was 26 and in Connaught not less than 49 per cent. of the total deaths recorded. Of the deaths registered in Ireland last year, 461 were those of persons aged 95 years or upwards, of which number 123 were stated to have attained the age of 100 years. Absolute verification of these ages is obviously impossible owing to the absence of public records for remote periods. But from careful supplementary inquiries respecting reputed centenarians these ages are believed to have been correctly stated.

Tuberculous Diseases.—Amelioration of Insanitary Conditions.

From an instructive diagram we learn that among definite causes of death tuberculous diseases occupied the first place in the year under notice. The mortality from tuberculosis in all its forms showed a decrease last year in the provinces of Ulster, Connaught, and Leinster, and an increase in the province of Munster. In the course of the last completed decennium the highest death-rate from all forms of tuberculosis occurred in the year 1904, when the rate was 2·88 per 1000, since which date there has been a gradual decline to a rate of 2·15 in the year 1912, showing a difference in the earlier as compared with the later year of more than 25 per cent. The figures for other parts of the United Kingdom are not yet available for 1912, but in the year 1911 the death-rate in England and Wales was 1·5 per 1000, in Scotland 1·7, and in Ireland 2·2 per 1000 of the respective populations. Of the deaths from all forms of tuberculosis about three-fourths are due to tuberculous phthisis. From a table showing the relation of age to mortality from this disease we gather that nearly 74 per cent. of the total deaths take place at ages between 15 and 45 years. In both sexes the highest phthisis death-rate occurs at the age group 25–35 years, men at that age succumbing at the rate of 3·09 per 1000 and women at the rate of 3·17 per 1000 living. In the Dublin registration area the rate of mortality from pulmonary tuberculosis in the year under notice was 0·41 per 1000 among the professional and independent classes, 1·50 per 1000 among the middle classes, 2·28 per 1000 among the artisan class, and 2·23 per 1000 among the general service class.

The following are among the agencies operating in Ireland for the benefit of the sick poor during the year under notice. The Women's National Health Association, under the presidency of Lady Aberdeen, has continued its activities for the benefit of the public health, and has established additional branches for the extension of its work throughout the country. Excellent work is still achieved by Lady Dudley's nurses among the sick poor in outlying districts. Those rural medical officers of health, who are also registrars for their several districts, have continued to furnish instructive notes which the Registrar-General regards as expressions of expert opinion upon the influences locally at work for the amelioration of insanitary conditions. A few of these deserve mention here. A medical registrar reports: "I find the nurses provided by the Women's National Health Association to be the greatest help to the poor in this district." Another registrar reports: "People here are wonderfully improved in the matter of cleanliness, and are becoming keenly alive to the necessity of admitting fresh air into their houses." Another medical registrar remarks that a custom exists in his district which is most dangerous to health. In every case of illness amongst the peasantry (except fevers, which they shun) the neighbours flock to see the sick person, and if the patient be a smoker, some friend lights his pipe and hands it to the sick man to smoke. That infected pipe is then passed on from mouth to mouth round the assembly. "I have known," says the registrar, "infection by pulmonary phthisis to be contracted by this pernicious habit."

Infectious Diseases.—Infantile Mortality.

From the section of the report that deals with "the common infectious diseases" it appears that, as compared with the experience of the previous year, the mortality in Ireland was excessive in the case of measles, scarlet fever, whooping-cough, and influenza. On the other hand, enteric fever, typhus, and diphtheria were substantially less fatal.

Infantile mortality in Ireland was at the rate of 86·4 per 1000 births, which is below the low rate of the preceding year by 8 per cent. In the "civic" unions of Ireland the rate was 115 per 1000 births, and 66·5 per 1000 in the remaining or rural unions.

[1] THE LANCET, August 2nd, 1913, p. 344.

ASYLUM REPORTS.

County and City of Worcester Lunatic Asylum, Powick (Annual Report for the Year 1912).—The total number of patients under treatment at this asylum was 1216, the average daily number resident being 1032. There were admitted 248 cases, and a history of a previous attack was noted in 15·2 per cent. of the direct admissions. The chief causes assigned in the direct admissions were: stress, 14·4 per cent.; heredity, 11·2 per cent.; senility, 8 per cent.; and alcohol, 7·2 per cent. Forty-five persons were discharged, and of these 31 were recovered, giving a rate of 24·8 per cent. on the direct admissions. The deaths numbered 92, being at the rate of 8·91 per cent. on the daily average number

resident. Post-mortem examinations were made in 81 cases. The Commissioners again suggest the provision of a verandah where tuberculous and other cases might be treated in the open air. We warmly commend this suggestion and wish that every asylum was so provided, not only for tuberculous cases, but for acute mental cases as well.

Middlesbrough County Borough Asylum (*Annual Report for the Year 1912*).—The average number resident at this asylum was 422. The cases admitted during the year numbered 94, being 16 more than in the previous year. The great majority of the cases admitted were of an unfavourable type so far as recovery was concerned. Forty-two patients were discharged, of whom 32 had recovered. The recovery rate was 37·6 per cent. on the direct admissions. The deaths numbered 41, the death-rate being 9·7 per cent. on the average daily number resident. Post-mortem examinations were made in 31 cases. We note with pleasure that neither mechanical restraint nor seclusion had been employed during the year. The verandahs which have been erected for open-air treatment were completed in the autumn of the year and are now in constant use.

Brighton County Borough Asylum (*Annual Report for the Year 1912*).—The average number daily resident at this asylum was 810. The admissions numbered 190, of whom 98 were males and 92 females. Of the admissions, 123 were deemed curable. The discharges were 166, of whom 70 were males and 96 were females. Of the males discharged 16 had recovered, this being a percentage of 28·6 on the admissions, excluding transfers. Of the 96 females discharged 34 had recovered, this being a percentage of 50·7 on the admissions, excluding transfers. 72 deaths occurred, 31 of this total being males and 41 females. The rate, based upon the average daily number resident, was 8·9 per cent. The mean age at death was 55·4.

Kent County Asylum, Barming Heath (*Annual Report for the Year 1912*).—The number of cases under treatment at this asylum during the year was 2006, the average daily number on the registers being 1667. The outstanding feature of the state of the asylum is that at the end of the year there were only 23 vacancies. Further accommodation is being provided for 50 men, and will be filled almost as soon as it becomes ready, while the vacancies for women cannot last for more than a year or two. It is considered inadvisable to further enlarge this asylum, which is already one of the largest in the country, so that the committee is faced with the urgent necessity of providing accommodation elsewhere. It would appear that there are in this asylum at least 300 persons who would be subject to be dealt with under the Mental Deficiency Bill if it were not for the fact that they are already being dealt with under the Lunacy Act. In considering the all-important question of further accommodation it is necessary to ascertain whether these persons could be transferred from the asylums to mental defective colonies or homes. The total number of cases admitted during the year was 387, and 18·3 per cent. of the patients admitted were over 60 years of age. Twenty, 22·2 per cent., of the direct admissions were known to have had one or more previous attacks. 35 per cent. only of the admissions exhibited forms of mental disorder which justified a favourable prognosis, and year by year the type of the admissions seems to become less hopeful. 56 per cent. of the direct admissions showed hereditary defect. 136 persons were discharged recovered, the rate per cent. for the men being 42·2, the highest recorded for 20 years; and 30 the rate for women, with one exception the lowest ever recorded. 54·3 per cent. of the recoveries took place within a year from the commencement of the attack. 50·7 per cent. of those recovered suffered from recent mania or recent melancholia. 46·3 per cent. of those recovered had a neuropathic family history. 29·4 per cent. of those recovered suffered from forms of mental disease which are liable to recur. Dr. H. Wolseley-Lewis, medical superintendent, reports that certain boards of guardians have drawn attention to the discharge of these recurrent cases. He points out that in the present state of the law there exists no option in the discharge of patients who are no longer certifiable, though it is fully recognised that a certain percentage will probably relapse. This is especially the case with those with a hereditary taint, who are very prone to relapse directly their environment becomes unsuitable. The deaths numbered 141, the rate being 8·4 per cent. Among the chief causes of death phthisis stands at the bottom of the list instead of, as heretofore, at the top. Post-mortem examinations were made in 95·7 per cent. of the deaths. Among the patients now resident Dr. Wolseley-Lewis calls attention to the presence of certain criminal lunatics. He emphasises the extreme undesirability of placing such persons in county asylums, and draws attention to a report of a Select Committee of the House of Commons issued so long ago as 1860, which said: "To mix such persons (i.e., criminal lunatics) with other patients is a serious evil. It is detrimental to the other patients, as well as to themselves."

Kent County Lunatic Asylum, Chartham Downs, Canterbury (*Annual Report for the Year 1912*).—At this asylum the average number resident was 1076. The admissions numbered 300, 50 per cent. of these being of a hopelessly incurable class, the really recoverable cases composing but a small minority. 103 persons were discharged, the proportion per cent. of the recoveries to admissions being 25. There were 148 deaths, the rate being 13·82 per cent. of the daily average number resident. Post-mortem examinations were held in 115 cases.

Asylum for the County of Salop and the Borough of Wenlock (*Annual Report for the Year 1912*).—The total number of cases under treatment during the year was 907, the average daily number on the registers being 719. The admissions numbered 175, and of these 49 were readmissions. 109 cases were discharged, and of these 68 were discharged recovered, the proportion per cent. of recoveries to admissions being 39·77. Of the 68 patients recovered, 85 per cent. had been resident in the asylum for less than 12 months. There were 69 deaths, the percentage of deaths on the average number resident being 9·6. Of the deaths, 23·19 per cent. were caused by tuberculosis. Post-mortem examinations were held in 34 cases. Dr. D. F. Rambaut, who has been medical superintendent for 11 years, was elected to the post of medical superintendent of St. Andrew's Hospital, Northampton, in February last, while Mr. W. Stanley Hughes was appointed to succeed him at the Salop Asylum in April.

West Sussex County Asylum (*Annual Report for the Year 1912*).—The average number resident at this asylum was 777. There were 245 admissions. Less than half of the cases admitted could be regarded as recoverable, and in only half of these, again, could the prospect be considered really favourable. In 137 cases the attack was said to be the first, and 48 gave histories of one or more previous attacks. In 123 instances the duration of mental symptoms before admission was reported to be less than a year. As regards the types of disorder admitted, the chief variations were in the diminution of senile cases and in the increase of the congenital cases and the cases of general paralysis. Heredity was assigned as a factor in the causation of the disorders in 29·07 per cent. of the cases. Eighty-one persons were discharged, and of these the recoveries numbered 45, giving 24 per cent. of the direct admissions. There were 70 deaths, necropsies being held in every case. The death-rate calculated on the daily average number resident was 9 per cent. Half of those who died were over the age of 60, ten of them being over 80 years of age.

Joint Counties Asylum, Carmarthen (*Annual Report for the Year 1912*).—The Commissioners in Lunacy in their report of June 7th, 1912, state that they had hoped that the matters at issue between the representatives of the Three Counties would have been settled and that a commencement would have been made with the much-needed improvements and the enlargement of this asylum. They further report with regret that though a provisional contract has been entered into for the purchase of the necessary site, and a draft agreement was in fact submitted by the last committee for their approval, no arrangement had, in fact, been arrived at. The long drawn-out warfare between the counties they regard as little short of a scandal, and in the interest of all parties concerned, and not least amongst them the patients, they trust that an end will soon come to this most unsatisfactory condition of affairs. It would appear that the patience of the Board of Commissioners has its limits, and that it is commencing seriously to consider what more drastic measure should be taken to ensure the provision of sufficient and adequate accommodation. The average daily number resident at this asylum was 706. The numbers on the asylum register at the end of the year showed a net increase of 20 compared with the return for the previous year. The

number of patients in excess of the proper accommodation had at this date reached the alarming figure of 115. Dr. John Richards, the medical superintendent, reports that the institution and its staff are, from an administrative point of view, taxed to the uttermost, and that it is a matter for profound thankfulness that in the face of this no great calamity has yet occurred. 135 cases were admitted during the year. Of the direct admissions, 79 were first-attack cases, and of these 36 were admitted within three months of the stated time of onset of the mental disorder. On the other hand, in 26 cases the mental disorder had existed for more than two years. In 23 cases the bodily health was good, fair in 68, and reduced in 44 cases. In 25·5 per cent. of the direct admissions there was ascertained a history of hereditary insanity or allied disorders. Sixty-five cases were discharged, and of these 42 were recovered, the proportion of recoveries to admissions being 32·30. There were 50 deaths, and necropsies were performed in 30 cases. The proportion of deaths to the average number daily resident was 7·08 per cent.

Public Health.

REPORTS OF SCHOOL MEDICAL OFFICERS.

Borough of Guildford.—The medical officer, Dr. R. W. C. Pierce, reports an unusual feature—namely, an increase in the number of parents objecting to inspection of children—and suggests that inspection should be made compulsory. The circumstances of Guildford may be peculiar, but the experience of medical inspectors is usually the other way round. The school clinic opened on June 3rd, 1912, deals with nose and throat cases, eye cases, and general and dental cases. The cost of equipment was £99 2*s.* 7*d.*; the cost of treatment up to Dec. 31st was £180 8*s.* 7*d.*, of which £20 17*s.* 6*d.* were collected in fees from parents. The number of patients treated was 310, but when an inspection clinic is added and a school nurse appointed the medical officer expects that a larger number of cases will be dealt with. The small number actually treated gives the high average cost per case of 10*s.* 3*d.*, and seems to point to the desirability of appointing a school nurse and developing an inspection clinic first, leaving the treatment clinic to develop to meet ascertained needs. The expense, however, is comparatively trifling, and even at the high figure quoted the amelioration of conditions obtained is decidedly "worth the money," apart from the more far-reaching view of social hygiene.

Borough of Richmond.—An inspection clinic in the Public Health offices has been established by Dr. J. H. Crocker, who has at his disposal the services of a school nurse who follows up untreated defective cases. Of the important defects reported for 1911 only 8 had not been attended to at the end of 1912. Of 529 defective scholars noted in 1912, 56·5 per cent. were found to have been under medical treatment at the first reinspection. It should be remembered that Richmond has two advantages in treatment: firstly, it is small, and secondly, very fortunate in its charitable institutions and allied societies.

Hampshire County Council.—An interim report by Dr. R. A. Lyster and dated April, 1913, shows that during the year ended July 31st, 1912, medical inspection cost £1772 17*s.* 2*d.*, and an application was made for a grant in view of the large proportion of medical inspectors' time occupied in re-examinations and similar work for the purpose of furthering treatment. The Board approved a grant of £787 18*s.* 9*d.*, leaving less than £1000 to be paid by the county. This result is, as Dr. Lyster says, very gratifying, encouraging, and should lead other authorities to more closely consider the treatment side of medical inspection work.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 8465 births and 4898 deaths were registered during the week ended Saturday, Sept. 20th. The annual rate of mortality in these towns, which had increased from 13·2 to 14·5 per 1000 in the four preceding weeks, slightly declined to 14·3 per 1000 in the week under notice. During the twelve weeks of the current quarter the mean annual death-rate in these towns averaged 12·6, against 11·7 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 5·2 in Southend-on-Sea, 6·1 in Ealing, 6·4 in Cambridge, 6·8 in Devonport, and 7·0 in Enfield, in Reading, and in Swindon, to 22·9 in Sunderland, 23·8 in Aberdare, 23·9 in Blackpool, 25·2 in Dudley, and 25·3 in Bootle.

The 4898 deaths from all causes were 82 fewer than the number in the previous week, and included 1118 which were referred to the principal epidemic diseases, against numbers steadily increasing from 281 to 1242 in the eleven preceding weeks. Of these 1118 deaths, 983 resulted from infantile diarrhœal diseases, 44 from whooping-cough, 40 from diphtheria, 20 from measles, 18 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 3·3, against 3·2 and 3·6 per 1000 in the two preceding weeks. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had steadily risen from 149 to 1104 in the nine preceding weeks, declined to 983 last week; of this number 218 were registered in London, 78 in Birmingham, 66 in Liverpool, 42 in Manchester, 32 in Hull, 24 in Sheffield, 23 in West Ham, 21 in Leeds, and 19 in Bradford. The deaths referred to whooping-cough, which had been 50, 31, and 38 in the three preceding weeks, rose to 44 last week; 9 deaths occurred in London, 9 in Birmingham, and 2 each in Tottenham, West Ham, Bristol, Liverpool, Manchester, Oldham, Sheffield, and Rotherham. The fatal cases of diphtheria, which had been 36, 45, and 36 in the three preceding weeks, rose to 40 last week, and included 8 in Birmingham, 5 in London, 3 in Leeds, and 3 in Sheffield. The deaths attributed to measles, which had steadily declined from 77 to 26 in the eight preceding weeks, further fell to 20 last week; 4 deaths occurred in Liverpool, 3 in Manchester, and 2 each in London, Oldham, and Blackpool. The deaths referred to scarlet fever, which had been 14, 17, and 28 in the three preceding weeks, fell to 18 last week, and included 4 in Birmingham, 3 in Manchester, and 2 in Liverpool. The fatal cases of enteric fever numbered 13, and were 3 in excess of the average in the earlier weeks of the quarter; 5 deaths occurred in Liverpool and 2 in Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 2115, 2112, and 2211 at the end of the three preceding weeks, rose to 2355 on Saturday last; 473 new cases were admitted during the week, against 331, 298, and 346 in the three preceding weeks. These hospitals also contained on Saturday last 865 cases of diphtheria, 209 of whooping-cough, 97 of measles, and 54 of enteric fever, but not one of small-pox. The 1187 deaths from all causes in London were 4 in excess of the number in the previous week, and were equal to an annual death-rate of 13·7 per 1000. The deaths referred to diseases of the respiratory system, which had been 124, 132, and 132 in the three preceding weeks, fell to 125 last week, and were 15 below the number recorded in the corresponding week of last year.

Of the 4898 deaths from all causes in the 96 towns, 165 resulted from various forms of violence and 347 were the subject of coroners' inquests. The causes of 30, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Sheffield, Bristol, Bradford, Hull, Nottingham, and in 55 other smaller towns. Of the 30 uncertified causes of death, 4 were registered in Preston, 3 in Sunderland, and 2 each in West Bromwich, Birmingham, Liverpool, Salford, and Darlington.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1035 births and 711 deaths were registered during the week ended Saturday, Sept. 13th. The annual rate of mortality in these towns, which had been 14·1, 14·1, and 16·7 per 1000 in the three preceding weeks, slightly fell

to 16·4 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 14·3, against 12·4 per 1000 in the 96 large English towns. Among the several Scotch towns the death-rates in the week under review ranged from 7·5 in Kilmarnock, 9·5 in Hamilton, and 10·2 in Motherwell, to 19·5 in Paisley, 20·9 in Kirkcaldy, and 21·5 in Greenock.

The 711 deaths from all causes were 12 fewer than the number in the previous week, and included 126 which were referred to the principal epidemic diseases, against numbers steadily increasing from 61 to 121 in the six preceding weeks. Of these 126 deaths, 96 resulted from infantile diarrhœal diseases, 12 from measles, 7 from diphtheria, 5 from whooping-cough, 4 from scarlet fever, and 2 from enteric fever, but not one from small-pox. These 126 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·9, against 3·6 per 1000 in the 96 large English towns. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had increased from 21 to 89 in the six preceding weeks, further rose to 96 in the week under notice; of this number 56 occurred in Glasgow, 9 in Greenock, 8 in Dundee, 6 in Paisley, 5 in Aberdeen, 4 in Leith, and 3 in Kirkcaldy. The deaths referred to measles, which had been 15, 9, and 14 in the three preceding weeks, numbered 12, of which 8 were registered in Glasgow. The fatal cases of diphtheria, which had been 7, 5, and 6 in the three preceding weeks, were 7, and included 3 in Glasgow and 2 in Edinburgh. The 5 deaths attributed to whooping-cough, of which 4 were recorded in Glasgow, were 2 below the average in the three preceding weeks. The 4 deaths referred to scarlet fever, comprising 3 in Edinburgh and 1 in Glasgow, were slightly below the average in the three preceding weeks. One fatal case of enteric fever occurred in Glasgow and 1 in Dundee.

The deaths referred to diseases of the respiratory system, which had increased from 44 to 86 in the four preceding weeks, declined to 65 in the week under notice; 25 deaths resulted from different forms of violence, against 27, 22, and 28 in the three preceding weeks.

In the 16 largest Scotch towns 1061 births and 625 deaths were registered during the week ended Saturday, Sept. 20th. The annual rate of mortality in these towns, which had been 14·1, 16·7, and 16·4 per 1000 in the three preceding weeks, further declined to 14·4 per 1000 in the week under notice. During the first twelve weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 14·3, against 12·6 per 1000 in the 96 large English towns. Among the several towns the death-rate last week ranged from 7·3 in Clydebank, 7·6 in Motherwell, and 7·8 in Leith and in Kirkcaldy, to 18·3 in Ayr, 18·6 in Dundee, and 18·8 in Greenock.

The 625 deaths from all causes were 86 fewer than the number in the previous week, and included 94 which were referred to the principal epidemic diseases, against numbers steadily increasing from 69 to 126 in the seven preceding weeks. Of these 94 deaths, 62 resulted from infantile diarrhœal diseases, 9 from whooping-cough, 8 from diphtheria, 4 from scarlet fever, and 2 from enteric fever, but not one from small-pox. These 94 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·2, against 3·3 per 1000 in the 96 large English towns. The deaths of infants (under 2 years of age), which had risen from 21 to 96 in the seven preceding weeks, declined to 62 last week, and included 30 in Glasgow, 7 in Dundee, 6 in Aberdeen, 6 in Paisley, and 3 in Kirkcaldy. The deaths referred to measles, which had been 9, 14, and 12 in the three preceding weeks, fell to 9 last week, of which 5 were registered in Glasgow and 2 in Leith. The fatal cases of whooping-cough, which had been 9, 6, and 5 in the three preceding weeks, rose to 9 last week, and included 6 in Glasgow. The 8 deaths attributed to diphtheria, comprising 5 in Glasgow, 2 in Aberdeen, and 1 in Greenock, were slightly in excess of the average in the three preceding weeks. Of the 4 deaths referred to scarlet fever, 3 occurred in Glasgow and 1 in Ayr; the fatal cases of enteric fever were recorded in Glasgow and Edinburgh respectively.

The deaths referred to diseases of the respiratory system, which had been 69, 86, and 65 in the three preceding weeks, were 65 last week; 17 deaths resulted from various forms of violence, against 28 and 25 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of this year, 587 births and 455 deaths were registered during the week ended Saturday, Sept. 20th. The annual rate of mortality in these towns, which had been 20·7, 19·9, and 21·1 per 1000 in the three preceding weeks, declined to 19·8 per 1000 in the week under notice. During the 12 weeks of the current quarter the mean annual death-rate in these Irish towns averaged 17·9 per 1000; in the 96 large English towns the corresponding rate did not exceed 12·6, while in the 16 Scotch towns it was equal to 14·3 per 1000. The annual death-rate last week was equal to 18·1 in Dublin (against 13·7 in London and 14·9 in Glasgow), 21·1 in Belfast, 30·6 in Cork, 22·9 in Londonderry, 10·8 in Limerick, and 13·3 in Waterford, while in the remaining 21 smaller towns the mean death-rate did not exceed 18·5 per 1000.

The 455 deaths from all causes were 30 fewer than the number in the previous week, and included 120 which were referred to the principal epidemic diseases, against numbers rising from 27 to 132 in the eight preceding weeks. Of these 120 deaths, 98 resulted from infantile diarrhœal diseases, 7 from measles, 6 from scarlet fever, 4 from diphtheria, 3 from enteric fever, and 2 from whooping-cough, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 5·2 per 1000; in the 96 large English towns the corresponding rate was 3·3, while in the 16 Scotch towns it did not exceed 2·2 per 1000. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 97, 92, and 111 in the three preceding weeks, declined to 98 last week, and included 37 in Belfast, 25 in Dublin, 13 in Cork, 6 in Londonderry, and 3 in Waterford. The deaths referred to measles, which had been 6, 10, and 2 in the three preceding weeks, rose to 7 last week, of which 5 occurred in Galway. The 6 fatal cases of scarlet fever, comprising 4 in Belfast and 2 in Dublin, were double the average in the preceding weeks of the current quarter. Of the 4 deaths attributed to diphtheria, 3 occurred in Belfast and 1 in Larne; of the 3 fatal cases of enteric fever 2 were registered in Belfast and 1 in Dublin; while the 2 deaths from whooping-cough were recorded in Belfast and Lisburn respectively.

The deaths referred to diseases of the respiratory system, which had been 43, 42, and 41 in the three preceding weeks, rose to 56 in the week under notice. Of the 455 deaths from all causes, 110, or 24 per cent., occurred in public institutions, and 12 resulted from different forms of violence. The causes of 11, or 2·4 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·6 per cent.

VITAL STATISTICS OF LONDON DURING AUGUST, 1913.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 5·4 per 1000 of the population, estimated at 4,518,191 persons in the middle of the year; in the three preceding months the rates were 4·8, 5·4, and 6·6 per 1000 respectively. The lowest rates last month were recorded in Kensington, the City of Westminster, Hampstead, the City of London, and Wandsworth; and the highest rates in Stepney, Poplar, Southwark, Bermondsey, and Deptford. The prevalence of scarlet fever showed a marked decline from that recorded in the preceding month; this disease was proportionally most prevalent in St. Marylebone, Poplar, Southwark, Bermondsey, and Deptford. The Metropolitan Asylums Hospitals contained 2093 scarlet fever patients at the end of last month, against 1414, 1579, and 2093 at the end of the three preceding months; the weekly admissions averaged 258, against 184, 232, and 312 in the three preceding months. Diphtheria also was considerably less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in St. Pancras,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1913.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1913.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,518,191	—	1001	445	1	58	—	24	304	4	20	1857	5·4	—	36	20	20	33	12	465	586	1·7	4097	11·8
West Districts.																								
Paddington	142,210	—	27	9	—	6	—	—	8	—	—	50	4·6	—	4	2	—	1	1	7	15	1·4	127	11·5
Kensington	171,284	—	31	6	—	3	—	1	2	2	—	45	3·4	—	1	1	—	—	—	9	11	0·8	116	8·8
Hammersmith	123,745	—	24	11	—	1	—	1	8	—	—	45	4·7	—	—	—	1	—	—	3	4	0·4	109	11·4
Fulham	157,117	—	41	11	—	3	—	—	14	—	—	69	5·7	—	—	1	1	1	1	19	23	1·9	112	9·6
Chelsea	64,598	—	15	1	—	2	—	—	6	—	—	24	4·8	—	—	1	—	1	—	3	5	1·0	48	9·2
City of Westminster	154,810	—	18	13	—	1	—	—	7	—	—	39	3·3	—	—	—	—	1	—	5	6	0·5	114	10·1
North Districts.																								
St. Marylebone	114,532	—	37	3	—	—	—	—	5	—	—	45	5·1	—	1	—	—	—	—	2	3	0·3	83	9·6
Hampstead	86,346	—	7	4	—	2	—	—	2	—	2	17	2·6	—	—	—	—	1	—	1	2	0·3	64	10·3
St. Pancras	214,330	—	47	27	—	5	—	1	15	—	2	97	5·9	—	—	1	1	1	—	14	17	1·0	189	11·5
Islington	325,585	—	73	35	—	3	—	2	21	—	4	138	5·5	—	—	1	—	1	—	23	25	1·0	276	10·8
Stoke Newington	50,518	—	7	3	—	1	—	—	2	—	1	14	3·6	—	—	—	—	—	—	1	1	0·3	38	9·3
Hackney	223,353	—	44	22	—	1	—	3	12	—	2	84	4·9	—	4	—	2	—	1	21	28	1·6	212	12·5
Central Districts.																								
Holborn	46,949	—	11	2	—	2	—	—	3	—	—	18	5·0	—	—	—	—	—	—	—	—	—	52	14·5
Finsbury	84,679	—	17	11	—	—	—	—	6	—	—	34	5·2	—	—	2	—	3	—	21	26	4·0	131	20·0
City of London	17,916	—	3	—	—	1	—	—	—	—	—	4	2·9	—	—	—	—	—	—	—	—	—	11	8·3
East Districts.																								
Shoreditch	109,654	—	8	19	—	1	—	1	17	—	1	47	5·6	—	—	—	2	1	—	31	34	4·0	145	17·8
Bethnal Green	127,824	—	28	16	—	6	—	—	15	—	—	65	6·6	—	1	—	—	2	1	21	25	2·5	123	13·0
Stepney	275,300	—	70	43	—	4	—	3	32	—	2	154	7·3	—	3	2	2	1	1	45	54	2·6	276	13·7
Poplar	160,913	—	59	17	—	3	—	5	12	—	—	96	7·8	—	5	2	2	2	—	41	52	4·2	227	18·2
South Districts.																								
Southwark	188,487	—	60	27	1	3	—	1	18	—	—	110	7·6	—	4	2	3	—	1	31	41	2·8	226	15·7
Bermondsey	124,739	—	49	17	—	1	—	1	10	—	1	79	8·3	—	5	—	1	1	1	39	47	4·9	168	17·6
Lambeth	297,139	—	66	27	—	3	—	1	14	—	—	111	4·9	—	2	1	1	5	2	19	30	1·3	284	12·3
Battersea	167,464	—	54	15	—	—	—	1	11	—	2	83	6·5	—	1	1	1	3	—	15	21	1·6	127	10·0
Wandsworth	330,395	—	36	27	—	—	—	3	15	1	1	83	3·3	—	1	1	1	1	—	22	26	1·0	204	8·0
Camberwell	261,805	—	64	18	—	2	—	—	18	1	1	104	5·2	—	1	2	—	1	1	24	29	1·4	220	10·9
Deptford	109,280	—	33	13	—	—	—	—	14	—	—	60	7·2	—	2	—	—	5	—	18	25	3·0	107	12·6
Greenwich	96,015	—	16	12	—	—	—	—	11	—	—	39	5·3	—	1	—	—	—	—	7	8	1·1	84	11·2
Lewisham	168,822	—	25	25	—	1	—	—	4	—	—	55	4·2	—	—	—	2	—	1	9	12	0·9	121	9·1
Woolwich	122,382	—	30	11	—	3	—	—	2	—	1	47	5·0	—	—	—	—	1	1	14	16	1·7	103	11·3
Port of London	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

Shoreditch, Stepney, Southwark, Bermondsey, Lewisham, and Greenwich. There were 798 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 803, 811, and 886 at the end of the three preceding months; the weekly admissions averaged 99, against 105, 116, and 128 in the three preceding months. The prevalence of enteric fever showed a slight diminution from that in the preceding month; this disease was proportionally most prevalent last month in Paddington, Chelsea, Hampstead, Holborn, Bethnal Green, and Woolwich. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 41, 35, and 50 at the end of the three preceding months, had declined again to 37 at the end of last month; the weekly admissions averaged 6, against 7, 5, and 10 in the three preceding months. Erysipelas was proportionally most prevalent in Fulham, Shoreditch, Chelsea, Bethnal Green, Stepney, Southwark, Deptford, and Greenwich. The 24 cases of puerperal fever notified during the month included 5 in Poplar, 3 in Hampstead, 3 in Stepney, 3 in Wandsworth, and 2 in Islington. The 4 cases of cerebro-spinal meningitis included 2 in Kensington; and the 20 cases of poliomyelitis included 4 in Islington and 2 each in Hampstead, St. Pancras, Hackney, Stepney, and Battersea.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the four weeks ending August 30th the deaths of 4097 London residents were registered, equal to an annual rate of 11·8 per 1000; in the three preceding months the rates had been 12·9, 11·1, and 10·6 per 1000 respectively. The death-rates last month ranged from 8·0 in Wandsworth, 8·3 in the City of London, 8·8 in Kensington, 9·1 in Lewisham, 9·2 in Chelsea, and 9·3 in Stoke Newington, to 14·5 in Holborn, 15·7 in Southwark, 17·6 in Bermondsey, 17·8 in Shoreditch, 18·2 in Poplar, and 20·0 in Finsbury. The 4097 deaths from all causes included 586 which were referred to the principal infectious diseases; of these, 36 resulted from measles, 20 from scarlet fever, 20 from diphtheria, 33 from whooping-cough, 12 from enteric fever, and 465 from diarrhœa and enteritis among children under two years of age. No death from any of these diseases was recorded last month in the City of London or in Holborn; among the other boroughs they caused the lowest death-rates in Hammersmith, St Marylebone, Hampstead, and Stoke Newington, and the highest rates in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Deptford. The 36 fatal cases of measles were 53 below the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Paddington, Hackney, Poplar, Southwark, Bermondsey, and Deptford. The 20 deaths from scarlet fever were slightly above the corrected average number, and included 2 in Paddington, 2 in Finsbury, 2 in Stepney, 2 in Poplar, 2 in Southwark, and 2 in Camberwell. The 20 fatal cases of diphtheria were 12 below the corrected average number; of these, 3 belonged to Southwark, and 2 each to Hackney, Shoreditch, Stepney, Poplar, and Lewisham. The 33 deaths from whooping-cough were 23 fewer than the corrected average number, and included 5 in Lambeth, 5 in Deptford, 3 in Finsbury, 3 in Battersea, 2 in Bethnal Green, and 2 in Poplar. The 12 fatal cases of enteric fever were 2 in excess of the corrected average number; 2 cases belonged to Lambeth. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was 41·3 per cent. below the average.

IT is announced that Dr. Edward Burnet, of Tunbridge Wells, has been selected as Liberal candidate for the boroughs of Warwick and Leamington at the next election. Dr. Burnet was formerly medical officer of health of Leamington.

THE SERVICES.

COMMISSIONS IN THE ROYAL ARMY MEDICAL CORPS.

AN examination for not less than 12 commissions in the Royal Army Medical Corps will be held on Jan. 28th, 1914. Applications to compete should be made to the Secretary, War Office, not later than Jan. 19th, 1914. The presence of candidates will be required in London from Jan. 26th, 1914. Intending candidates will find in the Students' Number of THE LANCET, published on August 30th, a full statement of the duties and emoluments of the service, which now offers so many opportunities to its officers.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been notified:—Fleet-Surgeons: W. Jackson to the *Woolwich*, on commissioning, and W. R. Center to the *Russell*. Staff-Surgeons: R. L. Jones to the *Victory*, for disposal, temporary, and W. E. Ormsby to the *Eclipse* for voyage home. Surgeons: A. S. Paterson to the *Eclipse*, on recommissioning, for voyage out, and to the *Egmont* on arrival at Malta; and G. B. Cockrem to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Captain Henry W. Long to be Major (dated June 27th, 1913).

Colonel A. E. Tate has arrived home from India on leave of absence.

Lieutenant-Colonel J. Donaldson has been selected for appointment to hold charge of the Military Hospital at Jubbulpore Cantonment. Lieutenant-Colonel J. Thomson has taken over charge at the Record Office, Royal Army Medical Corps Depôt, Aldershot. Lieutenant-Colonel C. T. Blackwell has been granted six months' leave of absence. Lieutenant-Colonel H. J. Pocock has joined at Murree Cantonment. Lieutenant-Colonel O. L. Robinson has taken up duty as Professor of Tropical Medicine at the Royal Army Medical College, in succession to Major W. S. Harrison. Lieutenant-Colonel R. Holyoake has been placed under orders for a tour of service with the Southern Army in India.

Major P. H. Henderson has been transferred from the Military Hospital at Portsmouth to the Royal Army Medical Corps Camp of Instruction at Tidworth Park. Major M. C. Beatty has taken up duty at Tregantle. Major T. F. Ritchie has been appointed to the London District. Major C. R. Evans has arrived home on leave of absence from the Military Hospital at Malta. Major H. A. Davidson has embarked for a tour of service in the Straits Settlements. Major C. G. Thompson has been transferred from the Military Hospital at Glasgow to Glencorse. Major E. C. Hayes has taken up duty at the Military Hospital, Cosham, on transfer from Lodmoor Camp. Major A. A. Seeds has been appointed Senior Medical Officer at Kuldana, Murree Hills District. Major S. W. Sweetnam has been granted eight months' leave of absence home from India on medical certificate, with permission to revert to the Home establishment on its completion. Major R. C. Wilson, specialist in otology at Gibraltar, has arrived home on leave of absence. Major L. L. G. Thorpe has been placed under orders to embark for a tour of service with the Southern Army in India. Major G. Mansfield has relinquished charge of the Military Hospital at Norwich. Major W. M. B. Sparkes has been placed under orders to embark for service in the Sierra Leone Protectorate. Major P. J. Probyn, D.S.O., has been transferred from the Military Hospital at York to Sheffield. Major W. E. Hudleston has been appointed to hold medical charge at Wool Camp on transfer from the Military Hospital at Portsmouth. Major S. M. Adye-Curran has arrived home on leave of absence from the Military Hospital at Sialkot Cantonment.

Captain J. St. A. Maughan has been transferred from the Royal Victoria Hospital at Netley to Tidworth Park. Captain H Stewart has been transferred from the Military Hospital at Ferozepore Cantonment to Halifax. Captain W. Egan has been transferred from the Military Hospital at the Curragh and placed in medical charge at Oranmore Camp. Captain C. T. Edmunds has arrived home from Peshawar. Captain A. T. Frost has embarked for a tour of service in India and on arrival will be appointed to the Northern Army. An exchange on the roster for service

abroad has been approved between Captain C. E. W. S. Fawcett and Captain S. L. Pallant; the former officer will now embark for service in India with the Southern Army instead of the latter. Captain M. Keane has taken up duty in the Southern Command. Captain E. W. M. Paine has been transferred from the Military Hospital at Monmouth and appointed to hold medical charge at Pembrey Camp. Captain J. E. Powell has been selected for appointment as Specialist in Dermatology and Venereal Diseases to the Military Hospital at Hilsea. Captain J. W. Houston has been transferred from the Military Hospital at Peshawar Cantonment to Cherat. Captain W. J. E. Bell has been appointed for duty at Queen Alexandra's Military Hospital. Captain O. Ievers has been selected for appointment as Specialist in Midwifery and Diseases of Women and Children. Captain F. C. Lambert has embarked for a tour of service in India, and on arrival will be appointed to the Southern Army for duty. Captain J. Frazer has been appointed Specialist in Bacteriology to the Royal Victoria Military Hospital at Netley. Captain A. M. Pollard has been appointed to the Eastern Command for duty on arrival home from the Military Hospital at Wynberg. Captain W. MacDowall has been placed under orders for a tour of service in the Sierra Leone Protectorate. Captain H. C. Sidgwick has been selected for appointment as Specialist in Operative Surgery. Captain P. Power has been placed under orders for transfer from the Military Hospital at Kilkenny to embark for a tour of service in India during the coming trooping season. Captain G. S. Parkinson has been appointed to the Scottish Command for duty on return from South Africa. Captain W. W. Brown, specialist in physical training, has been appointed to officiate as Deputy Assistant Director of Medical Services (Sanitary) to the Sixth (Poona) Division. Captain T. H. Gibbon has been appointed Specialist in Bacteriology to the Dublin District. Captain G. G. Collet has been granted leave of absence home from India for six months.

Lieutenant H. J. G. Wells has been placed under orders to leave the Cork District for a tour of service in India during the coming trooping season. Lieutenant W. W. Pratt has been appointed to the London District. Lieutenants C. J. Little and A. A. M. Davies have taken up duty in the Northern Command. Lieutenant J. F. O'Connell has been appointed to the Aldershot Command. Lieutenant T. E. Osmond has been placed under orders to embark from Southampton for India on Oct. 22nd, and on arrival will be appointed to the Northern Army for a tour of duty. Lieutenant W. F. Christie has joined the Military Hospital at Singapore. Lieutenant H. R. L'Estrange has been placed under orders for a tour of duty in Mauritius. Lieutenant W. P. Croker has been ordered to join the Irish Command for duty, and on arrival will be appointed to the Dublin District. Lieutenant S. D. Large has been appointed to the London District for duty at the Queen Alexandra Hospital, Grosvenor-road, S.W. Lieutenant E. A. Strachan has been transferred from the military hospital at Edinburgh to Barry. Lieutenant H. J. S. Shields has been transferred from the Military Hospital at Windsor and placed in medical charge at Pirbright Camp. Lieutenant P. M. J. Power has joined the Royal Army Medical Corps Camp of Instruction at Tidworth Park, Salisbury Plain, on transfer from the Military Hospital at Cosham.

INDIAN MEDICAL SERVICE.

Colonel R. N. Campbell has been granted combined leave of absence home from India for eight months.

The services of Lieutenant-Colonel D. M. Davidson have been replaced at the disposal of the Government of the Punjab. Lieutenant-Colonel J. Ogilvie, civil surgeon at Delhi, has been granted six months' leave of absence home from India.

Major T. C. H. Leicester has been appointed to officiate as surgeon to the Eden Hospital for Women during the absence on leave of Lieutenant-Colonel C. R. M. Green. Major A. A. Gibbs has been granted eight months' leave of absence home from India. Major E. C. MacLeod has been appointed to officiate as Inspector-General of Civil Hospitals and Prisons in Assam. Major L. J. M. Deas, agency surgeon to the Bhopawar State, has been appointed to officiate as Political Agent during the absence on leave of Lieutenant-Colonel B. E. M. Gurdon, C.I.E., D.S.O. Major J. A. Black, on return from leave of absence, has been appointed Chemical Examiner to the Government of India. Major H. M. Mackenzie has been appointed to officiate as Professor of Pathology at the Government Medical College, Lahore, during the absence on two years' leave of Major W. H. C. Forster. Major W. F. Harvey has taken up duty as Director of the Central Research Institute of India at Kasauli Cantonment. Major W. R. Battye has been granted seven months' combined leave of absence home from India.

Captain J. A. A. Kernahan has been appointed to Shillong. Captain R. S. Kennedy has arrived home on leave of absence from India. The services of Captain M. R. C. MacWatters have been placed at the disposal of the Government of the United Provinces of Agra and Oudh for civil employment. Captain C. H. Cross has been attached to the Chemical Examiner's Department in Madras. Captain F. W. Sumner has been transferred to Saharanpur. Captain C. A. Gill has been granted an extension of leave of absence home from India. Captain H. R. Dutton has been reverted to the establishment of Bengal Presidency. The services of Captain W. S. McGillivray have been placed temporarily at the disposal of the Government of Burma for employment on plague prevention duty. Captain D. Coutts has been appointed to the substantive medical charge of the 37th Regiment of Dogras. Captain V. P. Norman has been granted an extension of leave of absence home from India on medical certificate until Nov. 10th next. The services of Captain R. B. S. Sewell have been replaced at the disposal of the Army Department, Government of India. Captain F. P. Mackie has been appointed to the Bacteriological Department. Captain J. H. Horne has arrived home on leave of absence from India. Captain J. E. Clements, superintendent of the central and district jails at Fategarh, has been granted privilege leave of absence. The services of Captain R. A. Lloyd have been placed temporarily at the disposal of the Chief Commissioner of the Central Provinces for civil employment. Captain W. Gillith has been granted two months' extension of furlough home from India. Captain F. S. Smith has been appointed to officiate in civil medical charge of the Allahabad District, in succession to Lieutenant-Colonel J. K. Close. The services of Captain W. A. Mearns have been placed at the disposal of the Government of Bombay for employment in the Jail Department. Captain N. S. Simpson, plague medical officer on special deputation duty at Kasauli Cantonment, has been appointed to hold civil medical charge of the Cawnpore District, in succession to Lieutenant-Colonel W. Young. Captain B. E. M. Newland has been deputed for duty with the travelling dispensaries in the United Provinces of Agra and Oudh. Captain W. D. Wright has been transferred from the charge of the Lucknow District to hold charge of the Benares District. Captain A. Miller has been granted one month's eave of absence.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Morton W. Ruthven, from the seconded list, is restored to the establishment (dated August 30th, 1913).

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Northumbrian Field Ambulance, Royal Army Medical Corps: Captain James D. Sinclair resigns his commission (dated Sept. 24th, 1913).

Attached to Units other than Medical Units.—To be Captains: Surgeon-Captain William Murray Mackay, from the 6th Battalion, The Durham Light Infantry (dated Sept. 24th, 1913); Lieutenant Frederick W. Sydenham (dated August 11th, 1913); and Lieutenant Cyril H. Welch (dated May 22nd, 1913).

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. J. Breward Neal, M.R.C.P. Edin., L.F.P.S. Glasg., who recently retired from the position of medical superintendent of St. John's Hill Infirmary at Wandsworth, has been presented by the staff with a silver tea service, a silver rose bowl, a silver cake basket, a settee, and a reading stand in appreciation of his distinguished services. The rose bowl bore the following inscription: "Presented to Dr. J. Bre ward Neal, medical superintendent of the St. John's Hill Infirmary, on his retirement, after 34 years' service, by his fellow officers of the Wandsworth Union, June 30, 1913."

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 893.*)

XXII.—HULL AND THE FRIENDLY SOCIETIES.

Mr. John Lewenstein, solicitor and clerk to the Insurance Committee of the town and port of Hull, expressed to me his great satisfaction with the working of the National Insurance Act at Hull. Out of a population of 287,000 persons 95,000 are insured, although some 6000 of these persons, reported by panel doctors as on their lists, had not as late as midsummer been traced back to their Approved Societies or as Post Office contributors. But this sort of thing has not been peculiar to Hull.

The Position of the Friendly Societies.

In Hull there is a larger proportion of artisans and labourers than in most towns, and it was supposed to be the stronghold of Friendly Societies. The Druids have their headquarters here, the Sons of Temperance are very strong, the National Amalgamated Society, the Refuge, the Pearl, and many other Friendly Societies and speculative insurance companies are very active in Hull, and all are now working under the Act. Hull consequently seemed to afford a good opportunity for endeavouring to ascertain what is likely to result from allowing two totally different organisations—i.e., Friendly Societies and commercial insurance companies—to work the Act. Mr. Lewenstein had previously acted as clerk to a County Insurance Committee in Wales. He is vice-president of the National Association of Clerks to the Insurance Committees and has just been appointed editor of the organ of that association, and has taken so prominent a part in the National Insurance world that he was well able to give me full information on the matter. To my surprise, he took a different view to what most persons expressed with whom I discussed the question. He thought, contrary to the impression, which he admitted was widespread, that the Friendly Societies do their work well. The commercial societies, meaning certain life assurance societies, might have excellent business methods, but they did not pay the benefits due as promptly as the Friendly Societies. They were working to make money and the smallest pretext was eagerly seized as an excuse for deferring, perhaps avoiding altogether, the payment of sums claimed. The Friendly Societies, on the contrary, do not seek to make money, but endeavour to carry out the motto, "Bear ye one another's burdens."

Possible Abolition of the Insurance Committees.

In the struggle between the two forms of organisation, Mr. Lewenstein did not anticipate that the more business-like administration of the commercial societies would end by sweeping away the Friendly Societies. Rather might such a contest result in the disappearance of both forms of organisation. There would then be created, on the German model, a National Insurance Organisation managed by the State and comprising the entire insured population. Such Friendly Societies or commercial insurance companies as might remain would provide all supplementary benefits that are not given under the Act.

Hull is not peculiar in one thing. Throughout the country I find that there is undoubtedly much bitterness of feeling and jealousy between the two very different sorts of organisations that have been allowed to carry out the Act. Some means will be attempted to bridge over this antagonism as it engenders so much discord. The present position is certainly very difficult, for experience proves that what occurred among those who voluntarily insured before the Act cannot be taken as an indication of what is happening to-day with the totally different population now under the compulsory clauses of the Act and forced to insure. These latter come from a different class of people altogether. A member of a Friendly Society is concerned in the prosperity of his society, for he is a paying partner, and it is to his interest to be careful not to occasion a larger expenditure than necessary. But the newly insured person, who did not belong to a Friendly Society, does not feel that there is a question of principle involved. He has never conceived that it might be his duty to pay a weekly subscription in order to help in bearing another's burden, and therefore he is much more likely to allow a cold to figure as quite a serious complaint if he can do so without malingering being detected. Many diseases manage in this way to expand, and they form, not only a drain on the funds secured under the Act, but a heavy tax on those extra benefits organised by the Friendly Societies over and above what the Act provides. For, after all, as long as the panel doctor signs the certificate, there is nothing to be done by the Society but to pay. One lodge, I am told, made a public statement that it had paid in three months as much as it paid during a year before the passing of the Act. Then the Temperance Friendly Societies say that their money is being eaten up by extra sickness among the intemperate. And over and over again the point was made to me that Friendly Societies, before the Act, were greatly composed of more or less selected lives. Under the Act medical examination before admittance has, of course, been abolished. Thus the drain on the funds has greatly increased, while, of course, the amount of work to be done by the medical men on the panel is also enormously greater than that done under the old system of contract practice. Everywhere this is the story—any increase of pecuniary return to the practitioner is accompanied by a vast increase of labour and of expenditure of time.

The Rising Generation and the Friendly Societies.

The attitude of the rising generation towards friendly societies is not as sympathetic as was that of their fathers. They will not give themselves the trouble to pay their subscriptions. The commercial companies have large staffs of collectors, and as these men very often collect for other purposes as well it pays them to go their rounds persistently. But this is not the case with the Friendly Societies, and unless the latter organise an equally effective body of collectors they will find themselves at a serious disadvantage. The commercial societies do all the work, take all the books, fetch them backwards and forwards; the subscriber has no trouble at all—he has only to leave out the money when the collector's call is due. If the young men of to-day will not take the trouble to pay in their contributions, still less are they likely to allow themselves to be elected as members of managing committees. The older generation looked upon the work of organisation as a matter of duty undertaken so as to better the condition of the class to which they belonged. They thought thus to do their duty towards their neighbour, and put in many hours of gratuitous work for conscience' sake, and their altruistic spirit misled them in one direction. As was shown sufficiently clearly in the articles which I wrote in THE LANCET now many years ago, entitled "The Battle of the Clubs," the conscience of these organisers allowed them, nay, appeared to impel them, to sweat their medical officers, who in some cases were abominably treated. The lamentable position which prevailed in Hull some 20 years ago or less is depicted in those articles very clearly, but that is not the point to which I wish to draw attention now. Such a thing as a Friendly Societies Medical Alliance paying in respect of 4000 members £208 for 27,000 consultations, or a fraction over seven farthings per consultation, cannot occur again, as it did in 1894. We may not be able to forget that such things happened, but it will be more useful to look ahead. The men who did these things were at any rate enthusiastic in the cause of their clubs. But the young men of to-day have not the interest in their Friendly Societies needed to make them attend lodge meetings. They will not take their share in the monotonous work of organisation. It is true that the old Friendly Societies were managed as a rule by a few public-spirited men, and that the rank and file of the members confined their energies to paying their subscriptions, while the wives who, fearing illness and domestic disaster, kept the men up to the point of regularly disbursing their insurance money. But the new members have not the same incentive to economy, and the prospect for the clubs is not good.

Lay Influence upon the Insurance Committees.

The outlook, so far as the medical profession is concerned, is far from pleasant to contemplate under certain possible developments in the working of the Act. To begin with, the representation of the Friendly Societies on the Insurance Committees is much too strong. I found this view, which was so clearly foreshadowed in THE LANCET, almost universally held in Hull. The Insurance Act is valuable to

the medical profession because it changes entirely the position of the club doctor, who was under the beck and call of a lay committee composed of small tradesmen and of artisans. The committee that managed the club or Friendly Society was too often one without the slightest sympathy either with the aims of medicine or with the lot of the doctor who was employed by the members—the figures I have just quoted prove how true this was about Hull. But these former managers of clubs and Friendly Societies are resuming the control of medical practitioners as members of the Insurance Committees, and it seems that if the nominees of the Friendly Societies disappear from the Insurance Committees they will be replaced by the nominees of the insurance companies. The profession will then be even more directly under the thumb of commercial enterprise. This would be quite intolerable, and the desirability of replacing the Insurance Committees by a National Insurance Organisation, in accordance with Mr. Lewenstein's suggestion, might become evident to the medical profession. At least he believes so, and he is possibly right if events turn out upon the Local Insurance Committees as he foreshadows. But here he, and those who think with him, may have miscalculated. The panel doctor does not make a contract with Friendly Societies or with insurance companies, but with the Local Insurance Committee acting under the Insurance Commission, which is a State institution. If the State exercised more power so that the Local Insurance Committee should not become too much like the management committees of the old clubs medical men would probably feel more secure, while difficulties created by the demand of different clubs would disappear. The question of certificates gives an example of what I mean. Why should not the Commissioners draw up an official and satisfactory certificate—a uniform formula to be used throughout the country? Approved Societies want to enforce the use of whatever certificate they may approve. But the Insurance Act is national. The benefits come from the State and not wholly from the insured person's individual society. The State and not the Approved Society might well provide the proper or statutory form of certificate. The thing needed is that the attending practitioner must certify when the patient should be placed on the sick list, whether he should continue on the sick list, and finally that he is well enough to return to work. Some societies want a fresh certificate every other day, and the Commissioners should make the societies accept a uniform rule in this respect. There will be no peace until this question is definitely settled, and the certificates rendered uniform in all the insurance areas. As it is, some panel doctors repeat the details on every certificate, others content themselves with putting "as before." One society at Hull refused to pay sick allowance because the medical certificate was written with an indelible pencil instead of with a pen and ink! Some societies want the certificates signed only on one specially selected day in the week. Therefore the patient comes when he wants advice or medicine, and then he comes round again a day or two later because that is the day his society has fixed for the signing of certificates. This, of course, is a loss of time for both parties. At Hull the feeling is strong that the medical man would not be worried in this manner if the representatives of the clubs upon the Local Insurance Committees were less influential.

The Allotment of Insured Persons.

But there is no feeling against the Local Insurance Committee at Hull as a business organisation. Actually, at Hull 80 out of 120 general practitioners are on the panel, and a very good impression was produced when three days after their first quarter's work all the panel doctors received the full 1*s.* 9*d.* to which they were entitled for every insured person on their list. This showed good business management on the part of the Hull Insurance Committee and its secretary. None of the money was kept back, and the panel doctors will probably get some 20 per cent. more in respect of those insured persons who have not yet selected their medical attendant, and they number more than 15,000. These are to be allotted on the following principle. First, so as to keep the medical adviser near to his patient, Hull has been divided into three districts. The practitioners in the A or first district will be called together to ascertain how many panel doctors consider they have already a sufficient number of insured persons on their list. The unallotted persons will then be divided evenly among the panel doctors who still desire more patients. The doctors of the B and C districts will proceed in the same manner, and it is calculated that these three districts are very similar—namely, a mixture of slums and residential quarters. Some medical men have already got very large lists. Thus one practitioner has 2800 persons on his list and his partner, instead of being free to assist him, has 2000 persons on his list. This is a very large slice of practice under the Act for one firm to take. The insured are told to select a separate member of a firm and not the firm, and many of them do not know which practitioners have already very full lists, while all are likely to follow the example of some neighbour or another with the scriptural result that to him who hath there will be given. The restraining movement will have to come from the medical men. Those who have already very many patients on their lists should not desire to add to their responsibilities lest they bring medical service into some disrepute by adopting the old methods of contract practice. Already one of the abuses which the old club system used to encourage made a brief appearance at Hull under the Act. It was discovered that some practitioners issued cards saying they were connected with certain Approved Societies and these were circulated among others than the members of the societies concerned. The cards seemed to make capital out of a connexion with certain State Approved Societies and undoubtedly constituted an advertisement. Protests were made and the cards were promptly withdrawn.

The Pharmaceutical Chemists and the Act.

Some if not all of the panel doctors have been prescribing too freely. During the first quarter 67,000 prescriptions were made up at an average cost of over 7*d.* each. The dispensing chemists were promptly paid 75 per cent. on their claims. This was the most that could be got out of the funds allotted for that purpose. But as in the ensuing quarter there was much less sickness and the novelty of the Act was beginning to wear out, the number of prescriptions that had to be made up was not so considerable. It is consequently anticipated that by the end of the year the account will be balanced or that there will be only a small deficit. But the chemists now claim an extra penny for poisons, and there was some trouble about the inferior quality of the bandages. However, the Medical Committee discovered a manufacturer who supplied good bandages at a sufficiently low figure and the chemists now know where to get what they require, a facility of which they readily make good use. The patients no longer complain that the bandages break. But the difficulty in regard to some of the drugs is not so easy to arrange. After the last amended list of prices was drawn up quinine rose from 1*s.* 5*d.* to 2*s.*; senna and mustard rose from 1*d.* to 1½*d.* the ounce. Croton oil and sandal oil have also gone up; large quantities of the latter are required in all great seaports. Nevertheless, and in spite of these difficulties, the Insurance Committee and its secretary consider that good headway has been made and that the Act is working well.

(To be continued.)

CHOLERA IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Constantinople and Neighbourhood.

THE small outbreak of sporadic cholera mentioned in my last letter on the subject (published in THE LANCET of June 14th last, p. 1697) came to an end, as there stated, on April 25th. Clean bills of health were issued from May 4th. For the next three months the city seems to have been free from the disease; but on August 5th 2 imported cases, 1 of which proved fatal, were recorded. From August 20th indigenous cases began to occur. Single cases were reported on August 20th, 21st, 25th, and 28th and on Sept. 2nd. On the 3rd 9 cases with 3 deaths were registered; of these, 7 cases occurred in a lunatic asylum at Scutari, on the Asiatic side of the Bosphorus. It is of interest to note that this asylum furnished a considerable number of cases during the epidemic of cholera in 1893. Since Sept. 3rd several further cases have been seen, both in the asylum and in different parts of the city. In all, 25 cases with 15 deaths have been registered down to the 10th inst.; 2 have been cured and

8 remain under treatment. It should be noted that all the above figures relate to the civil population. No exact information has been furnished as to the prevalence of the disease among the troops of the capital; but rumour has it that many cases have occurred—notably in the large Selimieh barracks at Scutari.

With regard to the source of infection in the present outbreak little is known with certainty. Of the first two causes, those of August 5th, one occurred in a Turk who had arrived here on the 3rd from Salonica on an Austrian Lloyd steamer, and who died the same day from cholera, bacteriologically confirmed; and the other was seen on a ship arriving from Rodosto and other ports on the Marmora. The later cases have been scattered irregularly about the different quarters of the city, without obvious relation between the successive cases, save in the asylum outbreak above mentioned. Possibly the infection has been brought here by the Turkish prisoners of war who have recently been arriving in larger or smaller groups. As shown below cholera has been prevalent for some time in Roumania, Bulgaria, and other portions of the theatre of the late wars, and many of the released prisoners have had the disease among them. At the lazaret of Monastyr-Aghzi, at the northern end of the Bosphorus, close to the capital, systematic examination of the dejecta of returning prisoners has been carried out for some time, with the following results:—

Date.	No. of stools examined.	Germ-carriers found.	Cases of cholera in germ-carriers.	Cases of cholera in non-carriers.	Cases of cholera in persons not examined for germs.
August 7th ...	123	3	—	—	—
,, 8th ...	—	—	1	—	—
,, 9th ...	99	12	2*	—	—
,, 10th ...	83	9	—	—	4
,, 11th ...	143	5	—	—	—
,, 12th ...	162	12	—	—	4
,, 13th ...	179	16	—	1	8
,, 14th ...	137	6	—	—	4
,, 15th ...	10	2		—	—
,, 16th ...	—	—	—	1	—
,, 17th ...	—	—	—	1	—
Totals	936	65	4	3	20

* Of which 1 was a ward attendant.

Since the 17th a few other cases have occurred, and in addition 1 suspected case was seen in an emigrant at the same lazaret on August 30th, and 8 germ-carriers were found in a group of 475 other emigrants on the 9th. A considerable proportion of the above cases in the Monastyr-Aghzi lazaret occurred among prisoners coming from Bulgaria (where cholera was then present) on board the Roumanian transport *Bucarest*, which took on 850 of these prisoners at Sulina and arrived at the lazaret on August 5th. One case of cholera was found on board at the moment of arrival, and is not included in the above table.

Cholera in Smyrna and Neighbourhood.

Cholera appears to have been imported to Smyrna also through the agency of emigrants. The first recognised case was seen on July 29th, but other cases are believed to have occurred earlier. Most of the early cases occurred either in emigrants or in persons occupying "hans" where emigrants lodged. Since the date named the following have been the weekly returns of the outbreak in Smyrna:—

From July 29th to August 3rd			...	14	cases,	9	deaths.
Week ending August 10th			... ...	39	,,	15	,,
,,	,,	,,	17th	23	,,	24	,,
,,	,,	,,	24th	18	,,	15	,,
,,	,,	,,	31st	49	,,	22	,,
,,	,,	Sept.	7th	26	,,	19	,,

making a total of 169 cases with 104 deaths. In addition some cases of the disease have occurred at the lazaret of Clazomene, near Smyrna. On August 4th the s.s. *Washington*, from Smyrna, reached the Dardanelles, but was repulsed to the lazaret just named, owing to the presence of two cases of cholera on board; another case occurred in the lazaret among emigrants from the s.s. *Carlsbad*, and some germ-carriers have been found among soldiers admitted to the lazaret to undergo disinfection.

Cholera at Hodeidah.

At Hodeidah, the principal port of the Yemen or Arabia Felix, an outbreak of cholera of some severity has recently occurred. On August 23rd it was reported that 15 cases of the disease with 8 deaths had been seen among recruits arrived from Smyrna by the transport *Hilal*. Between the 23rd and 26th 43 more cases with 5 deaths occurred in the military hospital, and 3 cases with 2 deaths in the civil population. On the 27th and 28th there were 50 "suspected" cases with 7 deaths, and it was reported that the bacteriological examination of the dejecta of the earlier cases, carried out at the Camaran lazaret, had given positive results. Between August 29th and Sept. 4th 5 more cases with 3 deaths occurred, the latter among the recruits from the *Hilal*. From Sept. 4th to 11th no further cases were seen.

Cholera in Roumania.

It is not always easy, even in times of peace, to obtain accurate information as to the prevalence of epidemic diseases in the Balkan States. In time of war the difficulties are increased. Turkey may be still technically called at war with the recently "allied" states of Greece, Bulgaria, Servia, and Montenegro, and she consequently receives no direct intimation of the appearance or spread of notifiable disease from any of them. Yet another difficulty that meets the would-be historian of epidemics in these regions is the uncertainty as to the exact boundaries of the respective countries, with the risk of attributing to one of them an outbreak of disease which has really occurred on soil which is now the property of another. In the case of Roumania, however, these difficulties scarcely exist, for, though her boundaries have slightly altered, she is not at war with Turkey. It is, however, far from easy to say exactly what has been the recent extent of the prevalence of cholera even in Roumania. The papers have published statements to the effect that many hundred (500 or 600 or more) cases of the disease have occurred in that country, but officially only the following information has so far been received here.

Up to August 1st 5 cases with 1 death were reported from the commune of Stefanesti, in the district of Ilfor (or Ilfov). Single cases occurred here also on August 4th and 5th. On the 13th a fatal case was observed in the village of Parveli, in the district of Kustendje. On the 25th it was reported from Galatz that 40 cases of cholera with 3 deaths had been seen among Roumanian troops returning from Bulgaria, and that the troops, sick and well, had been isolated outside the town. On Sept. 1st a telegram was received from the Turkish consul at Braila stating that 29 cases of the disease had been recognised "that morning" in the town of Braila, and also several cases among the troops camped some 20 minutes away from the town; and on Sept. 5th the same authority reported that 12 cases (9 of them "suspected") had occurred on a British ship which had been at Braila for the previous 17 days. A telegram, however, of Sept. 4th states that 29 cases of confirmed cholera had occurred at Islaz, in the "circonscription" of Braila, and it is to be noted that during all this period ships were arriving from the port of Braila with clean bills of health.

On August 21st the Turkish consul at Sulina reported that among 400 emigrants in the lazaret at that port 11 had died from cholera in the preceding two days, and on Sept. 3rd news was received from Kustendje that 5 cases with 1 death had occurred two days earlier in different communes of the district of Kustendje. Finally, on Sept. 8th there was 1 death, and on the 9th 7 cases with 2 deaths in Braila, and in addition 5 deaths among the cases from the English ship above mentioned.

Cholera in Bulgaria, Servia, and Greece.

For the reasons given above it will be more convenient to deal with these countries together. The date at which cholera appeared in either country is not apparently known. In Servia it was officially stated that down to June 19th (whether Old or New Style is not clear) 103 cases of the disease, with 32 deaths, had occurred at Belgrade, Obrenovac, Lazarsvac, and Bolsevac, and it was added that the infection had been imported to Servia by troops returning from Ishtip in Macedonia. Later it was announced that up

to July 21st 420 cases in all, with 164 deaths, had occurred in Servia, and that of these 352 cases and 142 deaths had been recorded among the troops. On August 14th the Austrian delegate informed the Constantinople Board of Health that, according to a communication from the sanitary authority of Uskub, 37 cases of the disease, with 19 deaths, had occurred in that town from the beginning of the outbreak (date not given) to August 2nd. It was added that, though no official information had been published as to the disease elsewhere, it had been learnt from trustworthy sources that many persons had died from the disease at Kumanovo, Ishtip, Keuprulu, and Kotchana. Finally, it was officially announced on August 7th that the cholera epidemic in Servia was rapidly declining, and that at that date only 42 cases of the disease remained in the military hospitals of Belgrade.

From Bulgaria only the scantiest information on sanitary matters has been received here. It seems, however, that cholera has been prevalent there, as in the other Balkan States. This has already been shown above, in speaking of the Roumanian troops and of the Turkish prisoners returning from Bulgarian soil with the germs of the disease, active or latent, among them. But of exact information from Bulgaria itself almost none exists. At Varna it is known, from British Consular sources, that 22 cases with 9 deaths occurred before August 26th, and it is generally affirmed that cholera has been more or less epidemic at Bourgas and in many other parts of Bulgaria.

The new Greece can no longer claim exemption from cholera epidemics as could the older and smaller Greece. On July 20th the Greek Government officially announced that "Piræus, Athens, and all Greece" were free from epidemic disease, but a little later cholera appeared in Salonica, now a Greek port. Between August 8th and 25th from one to ten cases were officially recorded here daily, with a tendency to increase on the later dates. In all, 79 cases were reported in that period. They seem to have occurred very largely amongst the Jewish inhabitants and the Mussulman refugees. Since August 25th the returns from Salonica have been as follows: August 26th, 7 cases; 27th, 8; 28th, 10; 29th, 10; 30th, 18; 31st, 20; and Sept. 1st, 7 cases; making a total of 159 cases in all.

Cholera in Austro-Hungary.

A considerable number of cases of cholera have recently occurred in various parts of the Austro-Hungarian empire. On July 18th a labourer living on an island in the Danube, in the commune of Temessziget, district of Kevevara, fell ill with the disease, bacteriologically confirmed. Between that date and July 31st 7 cases with 3 deaths occurred here. On August 5th a woman was taken ill with symptoms of cholera in the Dalmatian port of Cattaro, and died next day. No other case seems to have occurred here. On the same day a stoker on the ship *Nena*, stationed near Titel, county of Bacs-Bodrog, was seized with cholera (confirmed bacteriologically). On the 11th 1 confirmed and 1 suspected case were reported from Krcevina (district of St. Pazna, county of Syrmia); a road surveyor fell ill with cholera (confirmed) in the Kevevara commune (county of Temes, adjoining Servia), and 6 cases with 3 deaths occurred at Gornia (district of Tuzla, in Bosnia). On the 16th there were suspected cases at Siminhan (district of Tuzla) and at Gracanica; 14 cases with 3 deaths in the district of Breko, also in Bosnia; and 1 (confirmed) case in a man who had arrived the day before at Ujvideh from Palanka. The last case was believed to have contracted the disease in Servia. On the same date there were 3 suspected cases (all fatal) and 1 confirmed at Progar (district of Zemlin, county of Syrmia). On the 17th there were single cases at Kupinovo (district of Zemlin) and in Zemlin itself. On the 18th 1 death (bacteriologically confirmed) occurred in the district of Mitrovitza (same county), and on the 20th there were single cases at Gornia, Siminhan, and (suspected) at Tuzla, while 2 cases with 1 death were also reported from Breko. Finally, 1 case and 3 deaths (from suspected cholera) were reported from Boljivić in the county of Syrmia on August 27th. It will be noted that most of the above cases occurred in districts bordering on the Danube, and that in some at least there was reason to believe that the infection came from Servia.

Cholera in Russia.

Cholera has recently made its appearance in the town of Kherson in Southern Russia. It is officially stated that between August 13th (26th) and 15th (28th) 4 cases of the disease with 2 deaths had occurred, all bacteriologically confirmed; and that a suspected case was also seen on the 16th (29th). Of the 4 patients, 1 was a washerwoman, 1 an unemployed labourer, and 2 dock labourers; all were inhabitants of the town, which they had never left; the suspected case was that of a beggar who had arrived from Nikolaief on the 14th (27th). The last-named died on Sept. 2nd, and on the same day a fresh suspected case occurred. There had then been in all 4 certain cases with 3 deaths and 2 suspected cases. But since then 2 fresh cases have been reported from Kherson on the 2nd, 2 cases with 1 death on Sept. 3rd (New Style).

Constantinople, Sept. 11th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Severing of the Rhymney Valley, Monmouthshire.

THE population of the Rhymney Valley is now double that of ten years ago, and is likely to increase, so that the question of efficient sewering has become an urgent matter. The difficulties connected with it have been increased owing to the sanitary administration being in the hands of several local authorities, and until the last few years it has been found impossible to produce a joint scheme which would be acceptable to them all. Happily, this initial difficulty has now been overcome, and a sewerage board has been formed of representatives of the urban district councils of Bedwellty, Mynyddislwyn, Rhymney, Caerphilly, and Gelligaer, and of the rural district council of St. Mellons. It is proposed to construct a main sewer 25 miles long to serve the whole of some of these districts and portions of others. Four parishes in the Llandaff and Dinas Powis rural district will also be included in the scheme. After passing through a tunnel the sewer will discharge into storage tanks with a capacity of 2,500,000 gallons. In these tanks the sewage will be stored for eight and a half hours each tide and then discharged into the Bristol Channel. The cost of the undertaking is estimated at over £200,000. It is of interest to compare this scheme with that of the Rhondda valleys, which was begun in 1889 and completed in 1892 at a cost of £160,000, the main sewer being about 18 miles long and also discharging into the Bristol Channel between Cardiff and Newport. This scheme was undertaken by the two urban districts of Ystradyfodwg, since re-named Rhondda, and Pontypridd, in whose districts there is now a total population of considerably over 200,000.

Porthcawl Rest.

Although there are several convalescent homes in North Wales there is only one such institution, the Porthcawl Rest, in South Wales. This may be accounted for partly by the fact that the latter is supported almost exclusively by Welsh residents, and receives very few patients from the English counties, whereas the North Wales homes receive both support and patients from both countries; indeed, one at Llandudno is looked upon as a Birmingham institution. The Rest at Porthcawl was established as long ago as 1862 in three small cottages by a colliery surgeon. Since then it has had an uninterrupted career of success due in part to the careful administration and in part to the financial assistance that has been received from the colliers and other workpeople who have so largely benefited by it. A subscription of 1 guinea entitled the donor to obtain the admission of a patient for three weeks, but so great a call was made upon the resources of the Home last year, when there were in August as many as 700 persons awaiting admission, that this period has this year been reduced to two weeks. In 1912 over 2000 men, women, and children were admitted to the Home, and with a view to extending its usefulness a large hotel in the proximity of the existing buildings has been purchased in which there will be accommodation for 60 women. The cost of this new undertaking is estimated at £8000, but the committee is appealing for £20,000 in order that still further enlargements may be carried out. In view of the prosperous state of the trade of the district there ought not to be any difficulty in securing even this large sum.

The Devon County Council and the Question of Venereal Disease.

At the last meeting of the Devon county council, held under the presidency of Earl Fortescue, Dr. R. Hogarth Clay, of Plymouth, moved a resolution calling upon the Government to give immediate consideration to the resolution passed at the recent International Medical Congress on the question of venereal disease. Earl Fortescue, who spoke in favour of the proposal, said that the resolution at the International Medical Congress appeared to him to indicate a desire to apply the principles of notification to venereal diseases, and to give facilities for the better diagnosis of these complaints, and he thought this suggestion would meet with the sympathy of most people. Dr. Clay's resolution was agreed to, and it was resolved to send copies to the Prime Minister, the President of the Local Government Board, and also to the county councils of England and Wales, inviting them to pass a similar resolution.

The Devon Education Committee and the Medical Treatment of School Children.

At the last meeting of the Devon county council the education committee reported that it was in correspondence with the Board of Education in reference to a scheme for the medical treatment of school children, but that in view of recent legislation it had referred the matter back to the special subcommittee to consider whether it was now desirable to modify the scheme in any way.

Proposed Salaries for the Medical Staff of the Plymouth Public Dispensary.

The committee of the Plymouth Public Dispensary has issued a report to the subscribers of that institution recommending that (with the exception of the honorary consulting medical staff) the medical staff shall be salaried. The committee suggests that three "general practitioners" (to be elected annually and to become ineligible after six years' service) shall constitute the medical staff of the dispensary, the senior of which shall receive £80 per annum, and the two other officers each £70 a year. A special meeting of the governors of the charity will shortly be held to consider the report, when it is expected that the recommendation of the committee will be adopted.

Health of Cornwall in August.

The medical officer of health of the county of Cornwall reports that the mean temperature was a little below the normal for August, and sunshine above the average. The general death-rate was 11·42 per 1000, compared with 10·94 for August, 1912. Twelve deaths were due to zymotic diseases. 106 cases of infectious disease were notified during the month. Three cases of poliomyelitis were reported, one each from Helston rural district, Launceston borough, and Looe. The birth-rate was 21 per 1000, the same as in August, 1912.

Death caused by Eating Yew Berries.

A coroner's inquiry was recently held upon the death of a man, aged 47 years, an imbecile patient at the Stapleton (Bristol) workhouse. Evidence showed that the deceased had been eating yew berries. Post-mortem examination proved that death was due to "acute intestinal inflammation produced by eating yew berries," and a verdict to that effect was returned.

Obituary.

Through the death on Sept. 19th, in his eighty-ninth year, of Mr. James Williams at Holywell, Flintshire, there has been removed one of the oldest and best-known medical practitioners in North Wales. Mr. Williams received his medical education at the Liverpool Royal Infirmary and St. Bartholomew's Hospital, London, qualifying as M.R.C.S. in the year 1848 and taking the L.S.A. in the following year. After acting as house surgeon to the Warrington Infirmary and Dispensary he practised in Holywell and early became connected with the Flintshire Dispensary and Cottage Hospital in that town, to which he was attached as honorary surgeon until quite recently. For over 50 years he was one of the district Poor-law medical officers of the Holywell union, and for over 30 years one of the medical officers of health of the Holywell rural district. In 1868 he was president of the North Wales branch of the British Medical Association. At one time he acted as surgeon to the Cheshire Artillery Volunteers. He took an active part in the public life of the town, being twice chairman of the local board of health and the first chairman of the urban district council on its formation in 1895, holding the office for three years. Mr. Williams leaves two daughters and two sons, one of the latter, Mr. Herbert W. S. Williams, having been associated with him in his practice.—The death of Dr. John Albert Nunneley occurred recently at his residence in Bath. He was the son of the late Mr. Thomas Nunneley, F.R.C.S. He received his medical education at Leeds, Guy's Hospital, and in Paris, and qualified as M.R.C.S. in 1863. He took the M.B. Lond. in 1864. The deceased, who had been for 30 years on the honorary surgical staff of the Leeds General Infirmary, was at one time lecturer on anatomy at the Leeds Medical School, senior surgeon to the Leeds Eye and Ear Infirmary, and lecturer on ophthalmic diseases at the Yorkshire College and Victoria University. Since his retirement Dr. Nunneley had resided at Bath, where he was highly esteemed. He took great interest in the medical charities of the city, was elected a governor of the Royal Mineral Water Hospital in 1901, and was also connected with other Bath institutions.—The death of Mr. George William Pauli occurred recently at his residence in Weston-super-Mare in his forty-fifth year. He was a son of Mr. Churton Pauli, surgeon to the Bristol City Hospitals, and received his medical education at the Bristol Medical School. He qualified as L.R.C.P. & S. Edin. and L.F.P.S. Glasg. in 1899. Shortly afterwards he commenced practice in Birmingham, and about four years ago went to Weston-super-Mare, where he was highly esteemed. Mr. Pauli had never enjoyed good health, but his kindness and genial manner made him very popular. He leaves a widow and child, for whom much sympathy is felt.

Sept. 23rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Sanatorium Benefit.

A MEETING of the Sanatorium Benefit Subcommittee of the Edinburgh Insurance Committee was held recently, at which a statement was made as to the communications which had passed between the subcommittee and the Scottish Insurance Commissioners with regard to the estimate for the treatment of tuberculous subjects under the National Insurance Act for 1913–14. The following is the estimate of the subcommittee:—*Expenditure of Insurance Committee:* Hospital treatment, 200 beds at £65, £13,000; domiciliary treatment, 105,000 at 6*d.*, £2625; additional domiciliary treatment for dependents and medicines, &c., to insured persons, £800; dispensary and officers, £1000, less £100 charged to administrative expenses, £900—£17,325. *Revenue of Insurance Committee:* For hospital treatment, 105,000 at 9*d.*, £3937, but say £4000; for domiciliary treatment, £2625—£6625; deficit £10,700. This estimate has been approved by the Insurance Commissioners, with the express provision that the item of £800 "for additional domiciliary treatment for dependents and medicines, &c., to insured persons" includes the provision of medical comforts. The estimate runs from Jan. 13th of the current year to Jan. 12th, 1914.

A Limit to the Names on the Panel.

At Dundee the Local Medical Committee under the National Insurance Act have taken a highly suggestive step. They have recorded as the opinion of a majority of their body that the maximum number of insured persons that can be adequately cared for by a practitioner on the panel is 2000. The Dundee Insurance Committee, to whom a report to this effect was made by the Local Medical Committee, saw clearly that they could take no action in the matter, the formation of the panel lists being definitely provided for under the Act, and no limitation to the number of persons on any one such list being suggested. The chairman of the meeting, while pointing out that the committee had no power of compulsion in the matter, thought they should adopt a motion which he had proposed three months previously, that practitioners who had more than 2000 names on their list should take means to reduce it to 2000 or less at an early opportunity. It was, however,

suggested that as nothing could be done till January next the panel doctors might be invited to confer on their views of a satisfactory arrangement. This was agreed to. It was clearly the view of the Dundee Insurance Committee that it was prejudicial to the best working of the Act that any practitioner should be responsible in accordance with the Act for more than 2000 persons, and this is the opinion, I believe, of quite as many medical men as laymen.

The late Dr. Gavin Tennent.

The medical profession and the general public of Glasgow and the West of Scotland have lost a good friend by the death of Dr. Gavin P. Tennent, which occurred on Sept. 13th. Gavin Tennent, who was the only son of Mr. James Tennent, was born at Strathaven in 1846. He was educated at a country school in the parish of Avondale, going from there to the University of Glasgow. He graduated as M.B., C.M., with "high commendation," after waiting several months on account of the fact that on passing his final examination he was under 21 years of age. He then went to Berlin to continue his medical studies, and on his return to Glasgow was appointed resident assistant in the Royal Infirmary, where he came under the influence of Lister and Gairdner. He left the Royal Infirmary to become resident physician to the Glasgow City Fever Hospital, and in his work there he was intimately associated with the late Dr. J. B. Russell. In 1872 he commenced private practice, and at first assisted the late Professor Leishman, sharing with him the duties of medical officer to the Duke-street Prison. He took his M.D. degree in 1870, and five years later was admitted a Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow. From 1868 to 1880 Dr. Tennent assisted Dr. J. B. Cowan in the performance of his duties as professor of materia medica at the University. When the Western Infirmary was opened in 1874 he became physician for out-patients, and in 1881 he was elected a full physician in charge of wards. He continued in this position till 1896, when he resigned owing to the increasing demands made upon his time by the claims of his consulting practice, and at that time the directors, to mark their appreciation of his 22 years' service to the institution, made him the first honorary consulting physician to the infirmary. To within a few months of his death Dr. Tennent conducted a large consulting practice, and he possessed in a very large degree the confidence of the medical profession and the public. In the University and at the Western Infirmary he was a most successful teacher, and attracted students by his earnestness and thoroughness and also by his rare clinical insight. As a man Dr. Tennent was much esteemed by all, and many of the younger members of the profession found in him a sympathetic friend and wise counsellor. Dr. Tennent was unmarried and was the last surviving member of his own immediate family.

Sept. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Advisers for Dublin.

IN June last the Irish Insurance Commissioners announced the appointment of some dozen or so medical practitioners as medical advisers in respect of insured persons in the city and county of Dublin. Their duties and salaries were to begin from July 1st. It is understood that their salaries did begin from that date, but their duties were only arranged last week. It appears, therefore, that for some eleven weeks public money has been given gratuitously to these gentlemen for no other reason than to pretend to the Treasury that a scheme for the certification of insured persons was in working order. At its last meeting the Dublin County Borough Insurance Committee expressed its dissatisfaction with the arrangements made by the Commissioners for the certification of deposit contributors. The practitioner appointed as medical adviser in this respect lives a considerable distance from the county borough area. Moreover, among his duties is the certification of insured persons resident in the county Dublin some 20 miles from the city. The scheme as submitted by the Commissioners to the Insurance Committee is as yet quite incomplete, some of the more important societies not being provided for.

Post-Graduate Courses in Dublin.

The post-graduate courses of study arranged by Trinity College and the Royal College of Surgeons both began this week. Each College arranges for one course of three weeks in the year, and by a stupid arrangement the courses run concurrently. This can hardly be due to any special suitability of the period of year for the work. To clinical teachers no more inconvenient time could be chosen. The hospital wards are only opening after their annual cleaning, and it is not possible so early in the session to have at hand a supply of interesting clinical material.

Medical Man Appointed Magistrate.

The Lord Chancellor has appointed Mr. Michael J. Kenny, of Bridge House, Tallow, to the commission of the peace for the county of Waterford.

Royal Victoria Hospital, Belfast.

The usual bi-monthly meeting of the board of management of the Royal Victoria Hospital, Belfast, was held on Sept. 17th, exactly ten years after the new hospital was opened, and the following interesting retrospect was put before those present: In 1902, the year before removal to the present splendid buildings, which were opened by King Edward, there were admitted as in-patients to the old hospital 2458, while there were 24,255 extern cases and 859 operations. A decade afterwards, in 1912, in the new Royal Victoria Hospital there were 3457 intern and 32,658 extern patients and 1611 operations were performed. In 1902 the average daily number of patients under treatment was 156·2, while in 1912 it was 225·9. These figures are very striking, and demonstrate what splendid work the hospital is doing.

Scarlet Fever in Belfast.

Scarlet fever, which began in an epidemic form in Belfast in the autumn of 1909, and which has continued during 1910, 1911, and 1912 (when there were 916 cases notified, being 150 in excess of the number notified in 1911 and 291 in excess of the number notified annually during the 10 years 1902–11), is, unfortunately, still prevailing in severe epidemic form, as it was stated at a meeting of the public health committee held on Sept. 18th that for the week ended Sept. 13th 57 fresh cases of scarlet fever had been reported (there were 44 in the previous week).

Rainfall in 1912 in Ulster.

From "British Rainfall, 1912" (by Hugh Robert Mill and Carle Salter), I find that 1912 was the wettest season in Ulster for many years. In Ballymena, a town 150 feet above sea-level, where rain fell on 246 days to the extent of 53·08 inches, 1912 was the wettest year for 36 seasons. At Newcastle, co. Down, near the Mourne Mountains, the rainfall in 1912 was 67·15 inches. In Belfast the amount of rainfall in 1912 varied from 42 to 46 inches, the average being 44·43 inches; this is distinctly above the usual average for Belfast, which is about 34 inches.

Sept. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Micro-organism of Rabies: Professor Noguchi at the Institut Pasteur.

Professor Noguchi, of the Rockefeller Institute, New York, who has been acclaimed in the press of the world as the discoverer of the micro-organism of rabies, has arrived in Paris to spend a few days, and has demonstrated his cultures and shown the protozoal cause of the disease to his *confrères* of the Institut Pasteur. He referred to the fact that his discovery was published simultaneously in a French journal, the *Presse Médicale*, and in the *Annals* of the Rockefeller Institute. Since Sept. 11th, in the research laboratories directed by Professor Metchnikoff, Professor Noguchi has demonstrated by the ultra-microscope the many sections he has which contain the granular corpuscles of rabies. The Japanese *savant* is surrounded by all the real researchers in Paris. He is short of stature, slim, and agile, with prominent cheekbones. His left hand was damaged by gunpowder when he was a child, only the thumb, and but half of that, remaining, yet he uses the hand with remarkable facility. He is a

wonderful craftsman, a *savant* of accuracy, methodical and painstaking. His work on the spirochætæ of syphilis, and on remittent fever, mycosis, and pyorrhœa, has been throughout of a pioneer sort. He conceived the ingenious idea by which he has been enabled to obtain pure cultures of spirilla. All the micro-organisms, as well as the protozoon of rabies, are anaerobic and can live only when sheltered from the air. He inoculates tubes filled with gelose, in the bottom of which he first places a portion of some tissue. A layer of glycerin floating on the surface of the culture prevents the penetration of the air, while the embedded organic material absorbs the oxygen that may form in the inoculated medium. Under the microscope in a strong light the spirilla appear grouped in a row, forming brilliant points like precious stones. Professor Noguchi showed his audience spirilla, the infective germs of gingivitis, and of dental caries. The latter, the causative agent of pyorrhœa, is distinguishable from that of syphilis only by its greater facility in culture and by the odour emitted by the culture. The demonstrations lasted for three hours. Professor Noguchi made all his researches in the United States, where he has lived for eight years. The culture of spirilla occupied his earlier years. He has succeeded in cultivating the microbe of Schaudinn, which led him to conceive a new reaction in syphilis analogous to that of Wassermann, but based on entirely different principles. Three or four years ago he discovered a reaction, both simple and certain, for revealing syphilis, unknown or latent. This cutaneous reaction consists in injecting in the epidermis of the arm a minute quantity—7/100ths of a cubic centimetre—of a mixture of the spirochætæ of syphilis from different sources, a sort of polyvalent vaccine, formed of killed bacilli. If the organism hides any germs, if it is still infected, the cutaneous reaction of Noguchi is positive. A pustule or a papule appears in the neighbourhood of the injection, two, three, or four days, sometimes even a month later. Professor Noguchi also claims that general paralysis is caused by spirochætæ which he has found in the brain. He has made from the recesses hidden in the cranial vault behind the parietal lobe in the horn of Ammon sections containing the spirochætæ. He next studied infantile paralysis, and succeeded in cultivating its microbe, and in conjunction with Dr. B. Alcock he is now seeking a vaccine against this serious disease. As to rabies, after 18 months' research he believes that he is at the desired end. The granular corpuscles, which are the infective agent in rabies, seem clearly to be protozoa having a distant resemblance to coccidia. Pure cultures injected into laboratory animals have caused rabies in them. But these protozoa multiply slowly. They can live in their culture medium deprived of air for three or four months, though by that time they have lost all their virulence. Professor Noguchi is about to undertake an entirely new series of researches into rabies.

The Death of Professor Poncet.

Professor Antonin Poncet, of Lyons, died suddenly at Culoz, on returning from bathing on his estate, at the age of 65. His studies were conducted at the University of Paris, when he took his M.D. degree in 1879. He became professor of operative surgery at Lyons in 1882, and in 1890 chief of the surgical clinic there. He was elected to the Academy of Medicine in 1895, and has published many authoritative medical works. For some years Professor Poncet has occupied himself with researches into the fatal illnesses of certain great men—Napoleon, Richelieu, and others. In 1894, when President Carnot was assassinated at Lyons, M. Poncet was the only Lyons surgeon who was willing to attempt operation with a view to saving his life, though his efforts were unfortunately unavailing.

Diseases of the Heart in Children.

Inflammation of the pericardium is very frequent in quite young children suffering from broncho-pneumonia. The difficulties of diagnosis have led M. Debove, permanent secretary of the Academy of Medicine, to assert that even the most careful physicians frequently fail to note this dangerous affection, and it is understood that able surgeons have not hesitated to recommend resection of the ribs, with a view to bringing the condition into view. The researches of Professor Marfan and his pupils have resulted in great progress in the diagnosis and treatment of pericarditis, for they succeeded, at the Hôpital des Enfants Malades, in draining the pericardium of its effusion by aspirating with a strong needle introduced into the upper part of the abdomen and directed behind the sternum when the distended pocket is found. Owing to the certainty of the technique there is no need to fear a dangerous puncture of the heart. Professor Marfan has succeeded thus 17 times very easily and without any incident in drawing off collections of pus, of half a litre or more, from a child 5 years of age. The authors of this plan have collected quite a series of confirmatory cases.

Sept. 22nd.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Fourteenth South African Medical Congress.

THE Fourteenth South African Medical Congress has come and gone. It was held this year at East London and was attended by a large number of practitioners from all over South Africa. The Rand was poorly represented, but many who had intended to attend were unable to leave Johannesburg owing to the strike of miners and the accompanying disturbances. Originally it had been the intention to hold the Congress at Grahamstown, but on account of the death of the president-elect the arrangements for the meeting at that centre collapsed and the East London practitioners stepped into the gap and organised the meeting in their centre instead. The Congress proved an unqualified success socially and scientifically as well as from the standpoint of the business done. Dr. J. Barcroft Anderson was president, Dr. K. B. Alexander vice-president, and Dr. P. P. J. Gauteaune and Dr. J. Tremble honorary secretaries and treasurers. The Congress was opened by Sir Frederic de Waal, K.C.M.G., the Administrator of the Cape Province, who took as his text the provisions of the Act of Union in regard to matters medical, and entered fully into the relationship of the provincial councils with the medical profession. He expressed his belief that if the profession would only realise the opportunity afforded it of obtaining legislative reforms by means of the provincial councils it might so influence public opinion as to obtain, through the provincial legislatures, at least some of those things for which it had hitherto unsuccessfully striven. He touched upon the work already accomplished by the Cape Provincial Council, and stated that there were in contemplation new laws relating to divisional councils and village management boards and a number of other matters of great importance in connexion with the preservation of the public health. He prophesied that even if no further powers were delegated by Parliament to the provincial councils they would have many years of useful work ahead of them in dealing with subjects which formerly were sorely neglected. He expressed the opinion that it would be to the advantage of the profession and the general public if the medical organisations would assist in advising the provincial administrations on matters in which they were interested; and speaking for the Executive Committee of the Cape Province, he stated they were always ready to accept advice on professional matters from recognised professional organisations. He then referred to the different licences imposed upon members of the medical profession under the old Colonial laws which were still in force, and expressed the opinion that the licence fee, at whatever it might be fixed, should be a registration fee only, payable on admission, and should be made uniform, and added that if there were any calling which should be exempt from an annual licence it was the medical profession. He touched also briefly on a number of matters in connexion with which the profession feels it has been badly treated, more particularly on the new tariff of fees laid down for medical witnesses, and also on the formation of the South African Committee of the British Medical Association. He concluded a very eloquent and practical address by expressing his hearty sympathy with the profession and by pointing out that it would be only by agreeing upon a common policy and by keeping that policy before the public in season and out of season that the profession could expect that their efforts would be crowned with success.

Dr. Anderson then delivered the presidential address, in the course of which he reviewed the present unsatisfactory condition of the medical profession in South

Africa. Dr. Anderson being a barrister as well as a medical man, was able to contrast the position of the two professions at the present time to the disadvantage of the latter. A wittier and more happily worded address has seldom been heard in South Africa.

The outstanding feature of the Congress was the discussion on the action of the South African Committee in pledging members of the British Medical Association to examine without charge to the Government recruits for the Defence Corps of the Dominion. This discussion developed later into a consideration generally of the relationship of that committee to the profession. Dr. D. Melville, of Umtata, brought forward three resolutions, the first two of which called for an explanation from the South African Committee of its action, and in the event of such explanation not being satisfactory recorded the strong disapproval of the Congress. The third recommended to the South African Committee and to the branches of the British Medical Association in South Africa that during the sittings of each future Congress there should be a general meeting of members of the British Medical Association convened for the purpose of enabling the South African Committee to render an account of its stewardship during the preceding year. An exception on a point of order by the secretary of the South African Committee being overruled, the first motion was proposed by Dr. Melville and seconded by Dr. C. P. Bligh Wall. Sir Kendal Franks, president of the South African Committee, after acknowledging the good taste and tone of the previous speakers, said that the Transvaal branch after a full discussion had decided there should be no charge, but expressed its willingness to abide by whatever the committee decided. There was no time to submit the proposition to the branches before the committee met at Kimberley. They took it for granted that the other branches would understand the matter at issue and discuss it, and the Border Branch had actually done so, though it had arrived at a different conclusion. The patriotic nature of the work had bulked large with the committee, while the amount of work required was small. To have fought the Government for the guinea examination fee would have rendered the profession very unpopular with the public and was against the sentiment of even a large part of the profession. The position taken by the committee would strengthen the hands of the profession enormously when it came to a real fight on important questions such as the fee tariff for medical witnesses.

After a prolonged discussion Dr. Melville withdrew the first two resolutions. He expressed himself satisfied with the explanation, although it would have smoothed matters if there had been some expression of regret at what he thought was now recognised even by members of the committee themselves as a tactical blunder. He and his friends would try their utmost to induce their colleagues to accept the explanation as they had themselves done, though this might not be easy in the absence of some expression of regret. Sir Kendal Franks was then thanked for his explanation, which was accepted. Resolution No. 3 was then put and carried unanimously.

The regulations of Congress were discussed and passed. Under these regulations in future Congresses will be held annually under the auspices of the British Medical Association in South Africa, and the management thereof will be vested in the South African Committee. A motion standing in the name of Dr. A. M. Moll, of Johannesburg, affirming the necessity of appointing medical referees in medico-legal cases was proposed by Dr. D. Campbell Watt and seconded by Sir Kendal Franks. After some discussion an amendment was carried referring the whole question of medical evidence to the South African Committee for transmission to the branches with a view to full discussion. The proceedings terminated with a vote of thanks to and confidence in the president and secretary of the South African Committee and a vote of thanks to the members of the profession in East London for their hospitable reception of Congress.

August 10th.

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—At the opening of the seventy-second session of the School of Pharmacy on Wednesday afternoon, Oct. 1st, at 3 o'clock, the presentation of the Hanbury gold medal will be made by the President, and the inaugural sessional address will be delivered by Mr. Frederick Belding Power, Ph.D., LL.D.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Civil Surgeons.

THE Secretary to the European Defence Association has addressed a letter to Government on the subject of the transference of European civil surgeons from districts and the employment in their place of Anglo-Indian assistant military surgeons and Indians. The opinions set forth in the above letter will command the cordial support of the European community generally throughout India. When the Indian people, now satisfied with their *vaids* and *hakims*, begin to demand the attendance of medical men trained in Western medicine the supply of independent medical practitioners will be forthcoming; but it is useless to think of creating an "independent" profession by establishing a new service of Government-employed doctors. In our sympathy for our Indian fellow-subjects we should not forget altogether our duty to ourselves.

Calcutta School of Tropical Medicine.

The School of Tropical Medicine in Calcutta may now confidently be expected to open in the autumn of 1914. Such a school was advocated in 1910 by the medical section of the Asiatic Society of Bengal as a suitable memorial to King Edward VII., but was unfortunately rejected. The Government of India favoured the scheme, and suggested that post-graduate teaching might be tried at the Calcutta Medical College Hospital without entailing any additions to the staff or laboratories. The sanction of the Secretary of State for India was obtained last year. The plans now adopted provide for a two-storeyed building with 220 feet of north light facing Colootalah-street, with foundations to carry a third storey when it is required. The lecture theatre will be fitted for the use of the epidiascope and for microscope projection apparatus, also a cinematograph, as films of medical interest are now available, illustrating such subjects as malarial prophylaxis and the movements of trypanosomes in the blood of an animal. The building will include a very fine general pathology laboratory, a library, reading room, and practical class-room.

Madras General Hospital.

The annual report of this hospital contains much matter of interest. The beds number 500, equally divided between the physician and surgeon. Major C. G. Webster, I.M.S., who submits the report, urges the great need for a special hospital for tuberculous diseases and the bad effects of treating such cases and enteric fever in general wards. Considering the care now taken in military hospitals to isolate enteric and tuberculous cases and the brilliant results thereof, it is amazing to find that a large teaching hospital persists in ignoring the infectivity of these diseases. Popular instruction in hygiene is rendered useless while the principles of prevention of two of the most common Indian diseases are not adopted in a Presidency hospital. Malaria cases treated have almost doubled during the past year, but as through understaffing proper blood examinations are not made, the accuracy of diagnosis on clinical grounds alone may be challenged. Students numbered 204, and 15 sub-assistant surgeons attended a post-collegiate course.

Grant Medical College, Bombay.

The report for 1912–13 has just been published. On the retirement of Lieutenant-Colonel C. H. L. Meyer, I.M.S., Lieutenant-Colonel A. Street, I.M.S., was appointed principal *sub. pro tem.*, in addition to his duties as professor of surgery; Major E. F. Gordon Tucker, I.M.S., was confirmed as professor of pathology, and appointed to act as professor of medicine; Captain R. M. Carter, I.M.S., acted as professor of pathology, and Captain A. J. V. Betts, I.M.S., as professor of materia medica. The total number of students on the roll was 520, 69 being Europeans, &c., 309 Hindus, 124 Parsis, 17 Mahomedans, and 1 Jew, in addition to 24 military medical pupils.

Sanitary Reorganisation in Bombay.

A Government resolution has just appeared in the *Bombay Gazette* on the steps to be taken for the appointment of health officers and sanitary inspectors in towns and municipalities. The Bombay Government has liberally agreed to bear two-thirds of the expense of health officers and one-third in the case of sanitary inspectors. The towns in

Bombay Presidency are divided into three classes. Those of each class will have one sanitary inspector for every 25,000 of population, while first-class towns—e.g., Ahmedabad, Surat, Poona—will have a first-class health officer, and those of the second class—Hyderabad (Sind), Sukkur, &c.—a second class. The third class will have no health officer.

Gift to a Medical College.

His Highness the Maharaja Scindia of Gwalior has made the handsome donation of Rs.25,000 to the Yunani Vedic Medical College at Delhi.

The Cocaine Traffic.

The spread of the cocaine habit has not yet been checked. But though Delhi is a well-known centre for the distribution of the drug its consumption has not as yet become general in Northern India. In other parts of India, notably in Calcutta, it threatens, however, to develop into a national vice, even surpassing the opium smoking of China. According to a recent article in a Calcutta paper during the last half year for which figures were available, the Calcutta police prosecuted 473 persons, and the Excise and other departments 213 persons for illicit possession, smuggling, or sale of the drug—i.e., nearly four persons a day, an increase of 30 per cent. Some 25 per cent. of the accused were children. Boys and girls are becoming addicted to the vice at an early age, and after a month's indulgence they wear all the signs of the confirmed consumer. It is well known that the prosecutions so far undertaken have failed to reach those really responsible for the organisation by which the sale of the drug is pushed in India, but since the police and Excise authorities have paid more attention to the trade the distribution of the imported drug has become somewhat more difficult. At one time in Calcutta the drug was sold in two-pice packets and was retailed almost openly by the army of betel sellers. The betel sellers now put 1 grain of cocaine into the other ingredients of the *pan*, so that many persons who would be most indignant if charged with being cocaine eaters are gradually acquiring a taste for the drug unknown to themselves. Cocaine differs from the other great anodynes that are most often misused—alcohol and opium—in that there appears to be no intermediate stage between medical use and excessive indulgence. Opium and alcohol are daily consumed by millions without any medical direction and without deleterious effects. But I have never heard of a regular and moderate indulgence in cocaine, those who take it infallibly consuming it to excess. This fact justifies a difference in the control of its production and forms a ground for limiting production to the medicinal requirements of the world, or retaining it as a Government monopoly. So far as I know, cocaine is produced in Germany alone. If the German Government is not prepared to take the trade into its own hands it might be induced, as one writer suggests, to insist on such registers of manufacture and sale being kept and published as would prevent the continuance of the present illicit trade. India has obeyed the behests of the Western World in restricting her output of opium within the narrowest limits; in return she may fairly claim some consideration from it in the matter of the export to her shores of a drug far more injurious than opium ever was.

Sept. 4th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Vital Statistics.

THE Federal statistician reports that in 1912 there were 52,177 deaths in the Commonwealth. The death-rate was 11·23, as against 10·66 the previous year. Typhoid fever claimed 619; malaria, 17; measles, 19; scarlet fever, 41; whooping-cough, 301; diphtheria, 754; tuberculosis of lungs, 3146; other tubercle, 542; pneumonia, 2107; appendicitis, 347; and suicides, 632.

Small-pox in Sydney.

The position with respect to the small-pox outbreak in Sydney has undergone little change in the last month. Cases have continued to occur in Sydney suburbs at the rate of about 10 a day, and over 500 cases have been recorded up to August 18th. No fatality has occurred, and in no case has any fatal issue been imminent. Sydney still remains a "quarantine area" under the Act, and travellers for other States are required to produce evidence of successful vaccination. The outbreak has not yet spread outside Sydney, although isolated cases have been reported far afield, and traceable to Sydney. Suspicious cases are reported in the far north of Queensland. No case has yet been discovered in Victoria, except the passenger by the *Karoola*, who was quarantined. A very large number of persons have been vaccinated, and much interest has been expressed in the symptoms resulting therefrom. Vaccinia rashes appear fairly common in Melbourne, although Dr. Walter Summons states he had only experience of 14 people out of about 15,000 bureau vaccinations. Another curious syndrome was persistent epigastric pain and tenderness with vomiting. In many of these cases morphia had to be employed, and in more than one surgical opinion was sought with the view of excluding acute pancreatitis. There has been some discussion as to the reason for these aberrant reactions, but nothing definite is forthcoming. Dr. J. H. L. Cumpston, the director-general of quarantine, maintains the lymph issued was all reliable. Other observers suggest that much of it was probably too new, and that from some of it growths of staphylococcus could be readily obtained. However, no lymph scare has been created, and the rush for vaccination has now practically ceased. Dr. Summons, in tabulating 1000 cases, gives his results as—

Successful ...	Mild	468 = 46·8 per cent.	
	Moderate... ...	341 = 34·1	,,
	Severe	27 = 2·77	,,
Unsuccessful		164 = 16·4	,,

In Sydney the apathetic phase has again been in evidence, and vaccination has not been as popular as in other centres, although it is estimated that about 300,000 persons have been inoculated. The Premier, Mr. Holman, who some time ago promised a compulsory vaccination Bill, has now gone back on his first attitude and talks about exemptions. Mr. Webster, a member of the Federal Labour Party, who refuses to be vaccinated, has been unable to leave Sydney to attend the Parliament sitting in Melbourne. He is said to be seeking some legal loophole of privilege, but it is fairly certain he will either have to be vaccinated or remain where he is, as the Victorian Health Department is strong in the vaccination cause. Dr. W. G. Armstrong, the city health officer, finds special points of conformity between this epidemic and small-pox in the invasion and distribution of the rash. The mild character was due to the absence of secondary eruptive fever, the rash in most cases appearing with a normal temperature. 513 cases have been noted and 240 were in quarantine on August 19th. Dr. Armstrong says the invasion is well marked, gradual in onset and marked by frontal headache. 20 per cent. have severe backache, while all have malaise, fever, and sometimes vomiting. These symptoms remit for variable time before the rash appears. Some patients have resumed work in the interval. Generally the invasion is longer than classical. The rash is, broadly, a rash of the upper half of the body rather than the lower, distal rather than proximal on the limbs, and extensor rather than flexor. Features unlike the classical disease are the sparseness of the eruption and in its evolution. The lesions almost appear as pustules, and occur in successive crops. No prodromal rashes have been noted.

Sight-Testing.

The Victorian Optical Association has induced the Government to introduce a Bill to register all practising opticians, and this has been objected to on some grounds by the legally qualified medical oculists. A conference was recently held between representatives of the two interests, and the medical men objected to the proposed provisions for sight-testing. Opticians could not claim to be generally competent to test eyesight as to the causation of defective vision. The conference was, therefore, unproductive. The Bill really proposes to create a close corporation of opticians, who are to be allowed to examine all future candidates for permission to sell spectacles and test vision.

Sale of Hypnotic Drugs.

The Victorian Government, on the recommendation of the Pharmacy Board, has passed regulations declaring that certain drugs shall not be delivered by chemists for sale or otherwise "except on the prescription or order of a duly qualified medical practitioner." The drugs included are chloral hydrate, cocaine, veronal and allied drugs, heroin,

morphine, paraldehyde, sulphonal and its homologues whether by any trade name, mark, or designation. The regulation does not apply to liniments or preparations for external uses only.

Compulsory Vaccination in Queensland.

The Home Secretary for Queensland has now approved of additional regulations promulgated by the Commissioner for Public Health under the Public Health Act, with special reference to the suppression of small-pox as well as checking the spread of certain other diseases. The powers given to the Commissioner to authorise house-to-house inspections, and the medical examination of the inmates, if necessary, are again included. Power is given to isolate infected or suspected premises until the examination and (if required) effective inoculation prescribed have been made. Force may be used to prevent persons from leaving such premises. It is provided that any health officer or authorised medical practitioner shall have the following powers in dealing with persons in contact with disease or suspected disease: (*a*) For the purpose of observing whether they are suffering or are likely to suffer from an epidemic disease he may order that they shall be detained for such period and at such place and under such conditions as he may direct, subject to the approval of the Commissioner. (*b*) In the case of small-pox he may inoculate any person so detained with glycerinated calf lymph or other lymph proper for the purpose; and if such person is required to be inoculated as aforesaid, until he has been effectively inoculated; or (*c*) after disinfection of the person, clothing, and personal effects of such person, and of the premises in which such person resides, or any of these, and if such person is required to be inoculated as aforesaid, after he has been effectively inoculated, he may discharge such person upon condition that he reports himself to a medical practitioner approved by the Commissioner, and submits to inspection and examination by a medical practitioner for such period, and at such intervals, places, and times as the Commissioner or health officer shall direct. Where a person is suffering from an epidemic disease there is power to order his removal to an isolation hospital or isolate him or her at home. Power is given to vaccinate prisoners, using force if necessary.

August 20th.

H.H. Prince Alexander of Teck will distribute the prizes to the students of the Royal Dental Hospital of London and London School of Dental Surgery on Tuesday, Oct. 7th, at 5 P.M.

LITERARY INTELLIGENCE.—Dr. Jacques Loeb, head of the Department of Experimental Biology in the Rockefeller Institute for Medical Research, has written a companion work to his "Mechanistic Conception of Life," which attracted much attention on its publication last year, entitled "Artificial Parthenogenesis and Fertilisation." It will be issued during the autumn by the Cambridge University Press as British agents for the University of Chicago Press. The subject of the book is an analysis of the mechanism by which the male sex cell, the spermatozoon, causes the animal egg to develop.—Professor Dr. J. Katzenstein, who presides over the Phonetics Department of the Nose and Ear Clinic at the University of Berlin, is publishing, through Mr. S. Karger in Berlin, the "Archives for Experimental and Clinical Phonetics" (a supplement to Passow's and Schaefer's Contributions), of which one volume will consist of three or four parts, and of which the price will be 24 marks. As in certain medical centres phonetic laboratories and out-patient departments have now been officially established, it has been felt that a publication which should collect and collate work relating to phonetics would have a proper place in medical literature.—A fifth edition of Dr. I. Burney Yeo's "Manual of Medical Treatment" is announced by Messrs. Cassell and Co. The revision has been carried out by Dr. Raymond Crawfurd and Dr. E. Farquhar Buzzard, who collaborated with the author in the fourth edition.—Her Majesty the Queen has intimated her willingness to receive a copy of a new work to be published by the St. Catherine Press for the National Food Reform Association, entitled "Rearing an Imperial Race," and edited by Charles E. Hecht, M.A. The volume purports to supply a key to forthcoming legislation from the standpoint of health and the domestic arts.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Concluded from p. 900.*)

THE meeting of the British Association which came to an end on Wednesday, Sept. 17th, was a very successful one.

Besides the sectional meetings addresses also were delivered on the evenings of Friday, Sept. 12th, and Tuesday, Sept. 16th, respectively, by Sir Henry Cunynghame, K.C.B., on Explosions in Mines and the Means of Preventing Them, in which he showed that the mixture of a certain proportion of stone dust with the coal dust rendered explosions almost impossible; and by Dr. G. Smith Woodward, F.R.S., on Missing Links among Extinct Animals. There were, further, five "citizens'" lectures delivered of a more rudimentary character to non-members of the Association at the Digbeth Institute, respectively on the Decorative Art of Savages, by Dr. A. C. Haddon, F.R.S.; the Panama Canal, by Dr. Vaughan Cornish; Recent Work on Heredity in Relation to Man, by Dr. Leonard Doncaster; the Microscopic Structure of Metals, by Dr. W. Rosenbaum; and Radioactivity by Dr. F. W. Soddy, F.R.S. These lectures are proving an increasing means of stimulating popular interest in scientific work and research.

It was decided to hold the meeting of 1915 in Manchester, and that of 1916 in Newcastle-on-Tyne, for the fourth time in each case. Next year's meeting will take place in Australia under the presidency of Professor William Bateson, F.R.S., director of the John Innes Horticultural Institute. The vacancy in the board of trustees occasioned by the death of Lord Avebury was filled by the election of Major P. A. Macmahon, one of the general secretaries, to whom a cordial vote of thanks was accorded for his 11 years' service, who was succeeded in that post by Professor H. H. Turner. The following new members of council were appointed: Professor W. H. Bragg, F.R.S., of Leeds University: Dr. F. A. Dixey, F.R.S., of Oxford; Mr. A. Lodge, of Birmingham University; Professor H. H. Dixon, F.R.S., of Dublin University; and Sir Everard Im Thurn.

Grants amounting to £1286 for the scientific purposes of the sectional committees were decided on.

Origin and Nature of Life.

Professor J. REINKE, Ph.D., in a thoughtful paper before the joint session of the Sections of Zoology, Botany, and Anthropology, discussed the questions—What is the nature of life? and How is it to be explained? Considering the question of whether life ought to be interpreted merely mechanically, he said a plant and an animal ought to be mechanisms, machines, nothing else, but of so complicated a construction that analysis is even yet unable to explain this merely mechanical machinery. In still older times people believed a *vis vitalis* to be active in the organism that did not accord with any other power in nature and that caused life. But this *vis vitalis* came more and more into contradiction with the principles of science until at last the contrary doctrine arose, that life was only a complicated example of the processes predominant in lifeless nature. This opinion was founded on the knowledge that plants and animals are composed of chemical combinations known also outside the organisms; that these combinations influence one another according to the universal chemical laws; that everywhere in the living body physical powers are active. In this manner physiology becomes the chemistry and physics of organisms. But the greater the progress in experimental physiology, he continued, the better we learn to use our knowledge of non-living matter for the explanation of the processes of life, the more we understand that a complete physico-chemical analysis is impossible for any important process of life. Behind all the physico-chemical facts found out by our physiological studies an unknown factor is hiding, an x not to be solved by levers and screws and chemical reagents. For his part he refused both the exclusive vital and the exclusive mechanical dogma, but did not wish to subordinate the living to the lifeless matter and to draw from the

dominion of lifeless nature only parallels for the explanation of life. He was sure that the laws of energy are valid in the organism as well as in unorganised nature, and that the change of matter and of power in animals and plants depends only on them. Life is based upon such transformations of energy —"Elementarprozesse"—and these elementary processes are bound to elementary mechanisms in the cells of animals and plants. These elementary processes and elementary mechanisms are not thrown together without order in the living body; they are united by an invisible string or chain, and this invisible chain or force that maintains the order among the elementary processes represents the true difference between life and any event in lifeless nature. Life, he concluded, has its own laws as well as light, heat, chemistry; which does not exclude the fact that the physico-chemical laws reign in the elementary processes of a living body.

Professor BENJAMIN MOORE and Dr. ARTHUR WEBSTER contributed an interesting paper on the Synthesis of Organic Matter by Sunlight in Presence of Inorganic Colloids and its Relationship to the Origin of Life. They pointed out that the whole world of living plants and animals depends for its present continuance upon the synthesis of organic compounds from inorganic by the green colouring matter of the plant acting as a transformer of light energy into chemical energy. A little reflection, they said, shows that this present state of affairs must have evolved in complexity from something more simple existing at the commencement. For chlorophyll, which now acts as the transformer, is itself one of the most complex of known organic substances, and could not have been the first organic substance to evolve from inorganic matter. In considering the origin of life, the start must be made in a purely inorganic world without a trace of organic matter, either plant or animal. As Schäfer has pointed out, any other supposition merely removes the seat of origin to some conveniently remote planet, and pushes the origin back farther in time, but brings us no nearer to a real solution. The earlier theories and views as to spontaneous generation all possess the error of attempting to start life amidst organic nutritive material which could not be there until life had already appeared. The complex organic substances, such as carbohydrates, fats, proteins, and all the many other organic cell constituents, are late products along the line of evolution of life, and the beginning lies at a level much below that of the bacterium or diatom. As a result of about 18 months of experimental work, they have, they believe, obtained evidence of the first organic step in the evolution. When dilute solutions of colloidal ferric hydroxide, or the corresponding uranium compound, are exposed to strong sunlight, or the light of a mercury arc, there are synthesised the same organic compounds which are at present formed as the first stage in the process of organic synthesis by the green plant—namely, formaldehyde and formic acid. If, now, we consider a planet exposed to the proper conditions of temperature and sunlight, that chain of events can be followed, which not only can but must occur. At first, as the planet cools down, only elements would be present, at a lower temperature binary compounds form, next simple crystalloidal salts arise. Then, by the union of single molecules into groups of 50 or 60, colloidal aggregates appear. As these colloidal aggregates increase in complexity, they also become more delicately balanced in structure, and are meta-stable or labile—that is, they are easily destroyed by sudden changes in environment, but, within certain limits, are peculiarly sensitive to energy changes, and can take up energy in one form and transform it into another. These labile colloids take up water and carbon dioxide, and, utilising the sunlight streaming upon the plant, produce the simplest organic structures. Next these simpler organic structures, reacting with themselves, and with nitrogenous inorganic matter, continue the process and build up more and more complex, and also more labile, organic colloids, until finally these acquire the property of transforming light energy into chemical energy. The problem of the origin of life hence acquires, in their view, the aspect of an experimental inquiry with vast opportunities for obtaining more exact knowledge. From this first step in the organic synthesis advance must be made to study how more and more complex organic compounds can be evolved. But it is clear, they concluded, that by the continued action of this "law of molecular complexity" life must originate, that forms of life are now originating, that the origin of life was no fortuitous accident, and that the same processes are guiding life onwards to higher evolution in a progressive creation.

The Effect of Low Temperatures on Cold-blooded Animals.

To the Section of Physiology the committee, consisting of Professor SWALE VINCENT (chairman) and Mr. A. T. CAMERON (secretary), presented its report (drawn up by the secretary) stating that Messrs. Cameron and Brownlee had carried out experiments on frogs (*R. pipiens*). They froze at a temperature of 0·44°–0·02° C., in a manner very similar to that of solutions isotonic with their body fluids. They would survive a temperature of – 1° C., but not one of – 1·8° C. The heart tissue, whether exsected or *in vivo*, of these frogs survived a temperature of – 2·5°, but was killed by one of – 3·0° C. Other observers had shown that frogs' muscular tissue would survive a temperature of – 2·9° C., while the peripheral nerves were not killed by much lower temperatures. Hence the cause of death was probably connected with a specific temperature effect on the brain or cord. Full details of these results would shortly be published, and the committee requested to be reappointed with a grant of £10.

Dr. DAWSON TURNER read a paper in the same section on Radium Rays in Thyroid Hypersecretion, which is published in full in our present issue (p. 924).

Reasoning Tests for the Mental Diagnosis of Children.

Mr. W. H. WINCH, in the Subsection of Psychology, offered an additional series of tests supplementary to those presented to the British Psychological Society on May 6th, 1911. The tests consisted of series of statements propounding a simple problem in intelligence, to be presented in writing to the children and read without undue emphasis by a person whose voice and accent are familiar to the children. As an example the following (No. 4 in Set 5) is quoted: "If more than half the boys in a class get all their sums right, and more than half the boys in the same class get no mistakes in dictation, do you think there were any boys who got all their sums right and also no mistakes in dictation, or do you think there were no boys who got all their sums right and also no mistakes in dictation, or can't you tell? You must say why." The methods of marking were described. It was claimed that these tests help to measure the higher mental faculties, and not being taught in schools form a good measure of the pupil's natural ability as distinct from the school's pedagogic proficiency. They indicate subnormality or backwardness, and assist in grading pupils on a basis of natural ability. They may help in distinguishing mental differences, if any, between boys and girls and the different levels of mental ability in schools of different "social class," and in selecting scholarship children. The results of the tests correlate fairly with age and still more closely with mental proficiency as indicated by "school standards." They show a considerable difference in reasoning ability among children of different social classes, and that the difference between boys and girls in non-numerical reasoning is only slightly in favour of the boys. The pedagogical efficiency of schools has very little bearing on the results of these tests.

Colour Perception in Children.

Mr. C. W. VALENTINE, in the same subsection, read an interesting communication on his observations of a three months old child regarding its perception of and preference for colour. The observations, which extended over a period of four weeks, consisted in measuring the periods during which the child looked at either of two coloured wools displayed simultaneously before him for two minutes. It was noted that while the brightest colours were preferred in general, some other factor of choice must exist, for the order of preference shown by the child was yellow, white, red, pink, brown, black, green, violet, and blue. Mr. Valentine's suggestion was that the capacity of colours for stimulating muscular strength, which according to Féré was greatest at the warm end and weakest at the cold end of the spectrum, was a possible determining factor.

A Preliminary Note on Habit-formation in Guinea-pigs.

Miss E. M. SMITH (Cambridge), in the same subsection, described some observations carried out under the direction of Dr. Myers at the Cambridge Psychological Laboratory this year, forming part of a larger scheme to test the inheritability in guinea-pigs of such characters as rapidity

of learning, ability to profit by practice, accuracy of performance, retentiveness, &c. The tests used were: (*a*) the labyrinth test, and (*b*) a new form of sensory discrimination test, in which photic and ordinary stimuli were combined. Although this preliminary investigation was necessarily somewhat general, it has brought to light hitherto unrecorded points of interest concerning guinea-pig behaviour, tending to show the superiority of the females over the males in the matter of reliability and accuracy as regards both the maze test and the sensory discrimination test.

A New Theory of Laughter.

Dr. W. MCDOUGALL reviewed the problems presented by laughter to the great thinkers, from Aristotle to Bergson, discussing the various theories enunciated, and suggested that laughter was primarily and fundamentally the antidote to sympathy, preventing us from dwelling unduly on the depressing influences that surrounded us. While the sympathetic tendencies of the species were of the first importance for social life, it would have been a serious disadvantage to the species if each man had had to suffer sympathetically, in however small a degree, all the minor pains of his fellows, which would overwhelm him with their cumulative force. Nature had solved the problem of the necessity of making each man continue to share in some degree all the more intense feelings of his fellow men, by sparing him the needless suffering that would have been entailed by his sharing also their multitudinous lesser pains, and the faculty of laughter was, therefore, a protective one.

The Evolution of Man from the Ape.

Professor CARVETH READ, in the Section of Anthropology, read a paper on the Differentiation of Man from the Anthropoids. He attributed man's evolution to his taste for animal food enabling him to wander beyond the confines of the forest, which led him to associate with others in pursuit of game. A consequently more regular food-supply would put an end to the seasonal relation between fruit time and the marriage- and birth-rate. Articulate speech would arise from coöperation. The upright position, with its effect on the alimentary canal, would be due to its advantage as a hunting posture, and the increased difficulty of catching a rabbit over plucking a banana would give rise to an increase in intelligence and the evolution of weapons and snares. Cannibalism was not generally associated with flesh eating, but was to be regarded as belonging to the experimental stage of human development.

Dr. HARRY CAMPBELL, discussing the factors in man's evolution from the anthropoids, said that evolving man like his anthropoid ancestor was polygamous. The man with the best physique and the largest intellectual endowment secured the largest offspring to inherit these endowments. Man's upward evolution had taken place essentially through bloodshed. The factors influencing the moral evolution of mind were the restrictions and obligations of communal life and motherhood, from which the altruistic sentiment took its rise.[1]

Living Cultures of the Embryonic Heart on the Kinematograph.

Professor H. BRAUS in the Section of Zoology exhibited on the kinematograph certain delicate phenomena of movement that were too rapid or too slow for simple inspection. The beating heart of a frog larva (Rana esculenta) 6 mm. long, perceivable only as a dot on a black background, was shown by magnifying it. It was an S-shaped tube. It was seven days old when photographed, but the rate of pulsation was about 80 per minute as on the first day. The movement was peristaltic, pulsation of sinus, atrium, ventricle, and bulbus being clearly distinguishable. The application of chemical rays caused suspension and irregularity. There were also typical refractory periods in certain cases. The proof of growing was afforded by photographing pigment cells at ten minute intervals for ten hours. As these are shown on the screen in a few minutes they increase in thickness, amœboid movements, and so forth, appearing to take place rapidly. The heart has no ganglion cells at either the beginning or the end of the experiment, and nerves proper are still a long way off. It consisted of two epithelial membranes, the cells lying in a compact layer. The heart cultivated *in vitro* possesses at first no cross striping and no microscopically distinguishable muscle cells, so the stimulus cannot be conducted by muscle; yet there is conveyance of stimulus, as shown by disturbances of coördination. The protoplasmic links between the cells must therefore be the conductors of stimulus.

[1] THE LANCET, May 24th, 1913, p. 1473.

The Morphology of the Mammalian Tonsil.

Miss M. L. HETT, in the same section, said that tonsils were normally present in most mammalian orders. Except in man they did not atrophy till extreme old age. She described Hammar's division of animal tonsils into primary and secondary, according as to whether lymphoid tissue was laid down in the tuberculum tonsillare or not, and discussed the difficulties presented by this classification. Investigation of many tonsils showed a distinctive gross anatomy for each animal group, characteristic always of the order, frequently of the family, sometimes of the genus.

The Problem of Sleeping Sickness.

Professor E. A. MINCHIN in the same section discussed Some Aspects of the Sleeping Sickness Problem. After describing the trypanosome and its life-history, he gave a picture of the symptoms caused by its growth in the human subject. The symptoms showed themselves in two periods—the first characterised by irregular fever and swollen lymphatics, especially in the neck, the second corresponding to the invasion of the nervous system by the parasites by way of the lymphatics to the cerebro-spinal fluid. With the second stage drowsiness, lethargy, and emaciation set in. The two periods varied in length, but the milder the disease the longer was the first period, and in West Africa the second stage was sometimes never reached at all, and persons might live a more or less normal life with trypanosomes in their blood. The tsetse flies which conveyed the parasite were not infective until the parasite reached the fly's salivary glands. This full development took place in only about 5 per cent. of flies fed on infected persons. In the rest the parasites are digested by the fly. The difficulty of combating the disease was in part due to the fact that the specific trypanosomes were not confined for one part of their cycle to man, but could live and propagate in certain other animals—e.g., antelopes, and some forms of domestic stock. It was proposed to exterminate the big game, but the domestic stock would still remain. Again, extermination of the flies' natural food might drive them into closer proximity to human habitations. Therefore such extermination should at first be done only experimentally and in limited areas. As to destroying the fly itself, gallinaceous birds were its chief enemy, scratching up and destroying its pupa. Wild gallinaceous birds should therefore be protected and fresh ones, such as the Indian jungle fowl, should be imported. The keeping of domestic fowls by the natives should be encouraged.

The "Reading Optophone."

Probably one of the most remarkable inventions of modern times is the "reading optophone," exhibited on Sept. 11th by Dr. E. E. FOURNIER D'ALBE. Last year Dr. d'Albe showed at the Optical Convention in London an "optophone," whereby the blind were enabled to recognise bright lights by their conversion into sound. The "reading optophone" consists essentially of a perforated disc which revolves above an electric lamp. Above the disc is a detector of selenium interposed in circuit with a battery and telephone. The flashes of light through the perforations in the disc are transformed by the detector into noises in the telephone. The interposition of an opaque object between the disc and the detector inhibits the telephonic sound, but the interposition of a lantern slide, partly transparent and partly opaque, breaks up the sound into different combinations of notes. Printed material gives notes differing with each letter. With practice it becomes easy to read the letters interposed between the disc and the detector. Dr. d'Albe is now perfecting the instrument to make it possible for ordinary letterpress on paper to be read thereby.

CENTENARIANS.—Miss Harriett Light, of Southside, Weston-super-Mare, celebrated the 100th anniversary of her birthday last week. Weston possesses another centenarian in the person of Mrs. Cooper, of Upper Church-road.—Mrs. Waugh, of Magor, Monmouthshire, who celebrated the 100th anniversary of her birthday on August 29th, has received a congratulatory letter from the King.—Mrs. Harriet Elizabeth Bignall, Elmside Estate, Exeter, has recently died, aged 100 years.

Obituary.

FREDERICK WILLIAM FORBES-ROSS, M.D. EDIN., F.R.C.S. ENG., D.P.H. LOND.

Dr. Frederick William Forbes-Ross died on Sept. 18th after a period of ill-health extending over some months.

Frederick William Forbes-Ross, who was born in December, 1867, in Jamaica, was of Scottish descent, being the eldest son of Sir David Palmer Ross, C.M.G., Surgeon-General of British Guiana. He entered Dover College when 13 years of age and in weak health, but left it robust and with a thorough educational grounding that formed the basis for his future success as a medical student. He received his medical education at the University and the Royal College of Surgeons of Edinburgh, where he was adjudged gold medallist and senior prizeman in anatomy, and at University College and Middlesex Hospitals, and also in Berlin and Paris. He took the M.B., B.S. of Edinburgh University in 1889, and proceeded to the M.D. degree in 1893. In 1898 he obtained the D.P.H. of the London Conjoint Board, and in 1903 took its conjoint diploma. In the same year he became a Fellow of the Royal College of Surgeons. He was at one time civil surgeon to the Guards' Hospital, London, and surgeon to the Kensington General Hospital, besides holding appointments at the Samaritan Hospital, the North London Hospital for Consumption, and the Children's Hospital, Paddington. He invented several surgical instruments and other apparatus, among them a traveller for opening deep-seated abscesses, a pilot catheter for evacuating blood-clot from the bladder, a retainable bulldog crushing clamp for hæmorrhoids, and an inhaler for the continuous administration of oxygen. He also advocated in our columns in 1912 a method of obviating post-operative pain by the administration all over and around the site of the proposed manipulations of multiple injections of a sterilised solution of quinine and urea hydrochloride.

A personal friend writes to our columns an appreciation which well describes the manner of man Forbes-Ross was, and which accounts for his comparative failure in high professional circles: "Dr. Forbes-Ross's strong personality and extraordinary abilities must inevitably have brought him into the front rank of his profession had he not been cut off in the plenitude of his powers. The recognition which was already his due was delayed by the fact of his being a free-lance in his profession and far too outspoken in his criticism of medical red tape and his denunciations of hospital abuses and appointments. It also went against him that his name appeared so frequently and prominently in the lay press. This gave a false impression that he was a self-advertiser, but it was in reality due rather to his own overflowing vigour and the keenness of his interest in all current questions. His energy was great. He was always championing some cause or fighting some battle, discovering a new food or making an industrial invention, while at the same time satisfying the demands of a large practice built up by his own exertions and ability. He had a large *clientèle*, especially among American visitors and the theatrical profession. As a surgeon, though intensely nervous, as he himself admitted, before an operation began, he was coolness and accuracy itself when he had once begun. His absolute confidence—one might almost call it cocksureness—gave the patient that entire belief in him which goes such a long way towards cure. His communications to medical and other journals on professional subjects covered a very wide field, and included researches in tuberculosis, curvature of the spine, and general and abdominal surgery, as well as the pressing subject of cancer, on which he published a work during the last few months of his life. Other works of his were on the intestinal diseases of infants and a translation of Brück's 'Diseases and Treatment of the Nose, Mouth, Throat, and Larynx.' Besides these, his inventive genius showed itself in devising or improving various surgical instruments and appliances, including one for use in cases of abnormal delivery. So much—and how much it is!—for a short life's work. But besides and beyond achievement are personality and character, and his was a notable personality. Like most medical men, he was lavish of time and skill on the poorest patients. When called in to operate in a case which had long been in local hands, he insisted—quite openly and aboveboard—that a part of his fee should go to the local practitioner. His vehemence, and indeed his volubility, when his feelings were aroused were as pronounced as his abhorrence of shams and trickery and unfairness of all sorts was great. Possibly owing to his birth in Jamaica, he had a decided vein of superstition and what may be called uncanniness in his character, but he had a deep sense of religious conviction, though his views were in some respects erratic and altogether unconventional."

Another professional friend calls special attention to Forbes-Ross's industry and determination as evidenced by his proceeding to the English Fellowship and the Diploma of Public Health after he had been qualified for a considerable number of years. "Disheartened," he adds, "at being unsuccessful in his efforts to gain a position on the staff of a London hospital, his disappointment was followed by a vigorous attack in the press on the whole system of medical patronage in such matters, and while his language was at times somewhat extravagant and certainly imprudent in his own interest, there were flashes in it of a righteous indignation in his onslaught which might have been more effectively expressed by quieter methods. ..... He was a good, original, and successful operator, and in spite of his professional polemics had worthily gained the confidence of many friends, both professional and lay. On his death-bed he remarked to the writer of this notice, 'What I thirst for most is friendship and love,' and there is no doubt that had he been successful in gaining a position in a good hospital he would have proved himself a valuable officer and loyal colleague, and one whose fertile brain and dextrous hands were calculated to advance both the science and art of surgery."

Dr. Forbes-Ross married a daughter of Sir William Hooper, K.C.S.I., late President of the Medical Board of the India Office, and has left his widow and two children to mourn their loss.

CLARKE KELLY MORRIS, M.R.C.S. ENG., L.S.A., J.P.

Mr. Clarke Kelly Morris, who died suddenly from heart failure at his residence, Gordon Lodge, Charlton-road, Blackheath, on August 31st, at the age of 58, was the son of Dr. Edwin Morris, of Spalding, Lincolnshire, and pursued his professional studies at St. Thomas's Hospital, London, becoming a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries in 1877. He was for some time surgeon to the Johnston Hospital at Spalding, and afterwards medical officer of health for the Spalding urban district council. Subsequently he was appointed surgeon to the Royal Kent Dispensary (now amalgamated with the Miller Hospital). He was also at one time resident clinical assistant at the City of London Hospital for Diseases of the Chest. In 1886 he entered into partnership with Mr. Peter Cooper, and later was associated with Mr. Finch White and Mr. Lionel Hooper, of Westcombe Hill. He was honorary consulting medical officer to the Blackheath and Charlton Hospital, a Fellow of the Obstetrical Society, and honorary local secretary and treasurer of Epsom College. He was appointed to the commission of peace for the County of London about 12 years ago.

Mr. Morris had a large local circle of professional colleagues and friends, by whom he will be greatly missed. He leaves a widow and seven children. The body was interred at Spalding.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Paul Näcke, director of the Colditz Lunatic Asylum, Saxony. He wrote numerous works and monographs on psychiatric subjects, dealing especially with moral insanity and criminal lunacy. He was 62 years of age.—Dr. E. F. H. Diesing, a Hamburg physician.—Dr. K. Scheiffele, of Ober-Esslingen.—Dr. E. Lang, senior district surgeon, of Rothwell.—Dr. K. Sigmundt, of Spaichingen, sanitary councillor.—Dr. Robert Rieder (Pasha), extraordinary professor of surgery in the University of Bonn. He was appointed in 1898 by the Turkish Government to be Inspector-General of the Turkish Military Medical Schools, and was entrusted with the duty of organising them on the German plan. He established the Haidar Pasha Military Medical School in Constantinople, and was director of the Gülhane Hospital, where he founded an Institute of Practical Medicine. After remaining in the Turkish service for about seven years, during which time

he was promoted to the rank of Pasha, he returned to Germany and became surgeon to the Brothers of Charity's Hospital and Extraordinary Professor of Surgery to the University. He published numerous works on Turkey and on pathological and surgical topics and edited the works of Carl Weigert.

Correspondence.

"Audi alteram partem."

ORAL PROPHYLAXIS.

To the Editor of THE LANCET.

SIR,—Cursory observation of those one meets in the streets proves the need of the many for instruction in better oral prophylaxis, and to this end will you allow me space in your columns for the following remarks?

That a clean tooth will not decay is undeniable, and the difficulty of cleansing between closely set teeth and to the bottoms of grooves and pits where the enamel is invaginated accounts for such places having a higher percentage of decay than others more accessible to the scrubbing of the tooth brush, most usually employed to scrub on to the teeth one of the many combinations of powdered chalk and soap. That such a method is still used is due to tradition and thoughtlessness. One has only to use one of these preparations for cleansing a greasy dinner plate, soiled by the same agency as the mouth, but infinitely easier to clean, to realise the uselessness of the combination for a cavity abounding with surfaces impossible to scrub, as does the mouth. Even on accessible surfaces the immediate good obtained by such abrasive cleansing, negligible though it be, is paid for dearly in the future, as the daily loss of protective covering, where owing to its thinness or softness the enamel is rubbed away, results in the formation of sensitive areas each demanding treatment for comfort's sake. The damage is not confined to the teeth as the gums, resenting the stimulus of the daily scouring, after a time recede, leaving the neck of the tooth bare. Also, the patient's tendency to deposit salivary calculus or tartar upon the teeth is increased, as the average patient rarely rinses the mouth free from the chalky matter of the powder or paste, and this increases by chemical attraction the rate of the deposit and itself goes to form it.

One may be excused for wondering why the use of sterilised water for cleansing the mouth has not been more generally insisted upon, since few would use unsterilised water for making a hypodermic injection. It appears reasonable to assume that, if suppuration can be induced by infective hypodermic solutions, the same will happen if infective water is scrubbed on gums of weak resistance, only the process of breaking down of the gum in the latter case takes a much longer time to bring about. One has only to examine the condition of the average cistern, usually under the roof and badly covered, or well water which may have drained through from an adjacent cesspool, to admit the need of increased care in dealing with this the main avenue by which infection enters the mouth.

Ideal oral prophylaxis, then, demands that the necessary water should be sterilised, that silk should be passed between the teeth to remove food débris, and that the dentifrice should be completely soluble in water so that the mouth can be easily rinsed free from it, that it should have a solvent action on fat, the binding medium by which the agents of decay are maintained on tooth surfaces, thus allowing the bactericidal action which it should possess to operate on the actual surface of tooth or gum. It should have no harmful action on tooth tissue or gum, and should be sedative to sensitive conditions of both.

In the writer's experience of the last 12 years the following combination has proved most useful and fulfils the foregoing requirements best:—℞ Lysol pure, 6 parts; chloroform pure, 2 parts. Mix. The patient is instructed to begin using 15 drops to half a pint of sterile water, as it is stimulant to diseased gums, and if used too strong at first occasions smarting. After a few days toleration increases as the tone of the tissues improves, and the strength can be increased up to a drachm to half a pint of water. To get the best effect it should be held in the mouth, say 20 seconds for each mouthful, and should be well brushed over the teeth and top of tongue, and the mouth rinsed finally with sterile water. The brush should be rinsed clean, dried, and kept in a clean place.

In dental practice the combination, diluted as described, is recommended for use before and after extractions, for preceding scalings, to abort gingival suppuration. In a case of specific perforation of the soft palate and rhinitis of 20 years' standing I found that it worked like a charm. It should supply a ready means of ensuring oral cleanliness in schools, &c., where expense is an object.

I am, Sir, yours faithfully,

PERCY FURNIVALL, L.D.S. Eng.

New Cavendish-street, W., Sept. 20th, 1913.

THE NATIONAL INSURANCE ACT; MEDICAL BENEFIT FOR MIGRATING MEMBERS.

To the Editor of THE LANCET.

SIR,—In your note on the above subject on p. 901 of THE LANCET of this week, when stating the arrangement made for the medical treatment of insured persons away from their own district, you make no comment on the inequity and, in my opinion, illegality of the arrangement in connexion with the "green and yellow voucher." Without entering into the question as to whether the remuneration offered to the doctor is adequate or otherwise, there is a violation of one of the main principles of the Insurance Act that the medical profession cannot afford to disregard. What, I would ask, becomes of the "free choice of the doctor" under this arrangement? It amounts to a right given to every insured person out of his district to exercise a privilege not given him by the Act, or by any Regulation that has hitherto had the consent of Parliament, and which he does not even possess in his relations with his own panel doctor. Section 15 (c) and (d) of the original Act and Regulation 22 are at the present time the only authoritative enactments bearing on this point; and I must submit that under these the arrangement known as the "green and yellow voucher" cannot be legally made, and if persisted in ought to be tested in the law courts. Again, if the Commissioners under Section 65 should publish further regulations to enforce this arrangement, if they can legally, seeing that the section in question only authorises regulations "that may be made"—and it is strange if regulations may be lawfully made to take away a right from the profession that is directly given by the said Act—then efforts should be made in Parliament to prevent the sanctioning of such further regulations.

It seems to me that the whole of this matter could be settled in a far less objectionable manner. If the Commissioners were to instruct all Insurance Committees to prepare a list of the panel doctors in their area who were willing to accept these vouchers, and where a sufficient number could not be obtained should, in conjunction with the Local Medical Committees, select a sufficient number for the purpose, then all temporary residents out of their own areas should be required to go to one of the practitioners on that list. It seems to me that under these circumstances there would be no more interference with the free choice of the doctor than is recognised to be permissible under the provisions of the Insurance Act. Surely there is no insuperable objection to some such course as is here indicated, and it is free from many grave defects that are present in that now laid down by the Commissioners.

I am, Sir, yours faithfully,

Hackney-road, N.E., Sept. 20th, 1913. MAJOR GREENWOOD.

A CONFERENCE OF SCHOOL MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—It is proposed to hold a meeting of assistant school medical officers and school medical officers at the offices of the Society of Medical Officers of Health, 1, Upper Montague-street, Russell-square, London, W.C., on Friday, Oct. 10th, at 4 P.M., in order that some of the grievances of those actually engaged in the medical inspection of school children may be ventilated.

The present time is opportune on account of the matter of

the grants from the Board of Education to local authorities in respect of money spent on medical inspection and treatment. The meeting will consider the advisability or otherwise of suggesting the formation of a committee of the Society of Medical Officers of Health to inquire into the matter. It is particularly desired that the meeting should be representative of all medical practitioners engaged practically in the work, irrespective of their being members of the Society of Medical Officers of Health. If those intending to be present would kindly communicate with me arrangements for the meeting would be facilitated.

I am, Sir, yours faithfully,

C. W. HUTT, M.D.,
Senior School Doctor.

7, Gloucester-place, Brighton, Sept. 22nd, 1913.

DETECTION OF SMALL AMOUNTS OF GLUCOSE IN URINE.

To the Editor of THE LANCET.

SIR,—It has been my work to give two processes for estimating sugar in urine, and especially for small quantities of sugar found in the wheat kernels and elsewhere. One method has been by oxidising a cubic centimetre of urine by means of permanganate and taking the temperature, the other by slight caramelisation and noting the colour, or by estimating it volumetrically. These tests are known and have been published. Allow me, therefore, to remark on the concluding advice given by Mr. Sydney W. Cole in THE LANCET of to-day, p. 860, with respect to the tolerance of carbohydrates. In my temperature method I found that healthy normal urine had the power of breaking up a certain quantity of both sugar and alcohol, even at ordinary temperatures, and that in such tests where 1 or less per cent. of alcohol or sugar in urine was used I could not get the full temperature or *the sum* of urine and alcohol and sugar, a part amounting to a quarter or half would be lost. Hence the "tolerance of carbohydrates" to be sought by a routine method, as advised, might well include not only how much sugar in small quantity might be there, but also what power the urine had of breaking up sugar added to the urine—whether due to the enzyme action of that trace of albumin, ever present in urine with the ferrocyanide and acetic test, or due to the other constituents of urine, or again to temperature.

I am, Sir, yours faithfully,

Sept. 20th, 1913. J. BARKER SMITH, L.R.C.P. Lond.

A STANDARD MEAL FOR RADIOGRAPHIC EXAMINATIONS.

To the Editor of THE LANCET.

SIR,—In the Section of Electrotherapeutics, at the annual meeting of the British Medical Association recently held at Brighton, the following resolution was passed:—

That this meeting expresses the opinion that it is advisable that one definite type of standard meal for radiographic examination should be adopted by general consent, and asks the Electrotherapeutic Section of the Royal Society of Medicine to appoint a committee to obtain evidence with a view of suggesting this official standard meal.

This resolution was formally handed to me as President of the section referred to, and I have undertaken to give this matter my personal care and see that it is acted upon. I therefore invite all radiologists and others who are interested in this subject, both here and abroad, to write to me stating, as concisely as possible, the composition, quantity, and consistency of the bismuth or barium meal they use as a general rule, and the reasons why they prefer such a meal.

The sooner this evidence is obtained the better it will be for all concerned, and it will facilitate matters very considerably if the bulk of it is ready to lay before the committee soon after it is appointed, probably during the month of October. As it is intended to give this question an international character, it is hoped that evidence will be given by radiologists in Europe, America, and elsewhere. Provided the communications are sent promptly they will be in time to be fully considered along with the rest. Communications should be sent to me at 66, Harley-street, London, W.

I am, Sir, yours faithfully,

REGINALD MORTON,
President, Section of Electrotherapeutics, Royal Society of Medicine.

Sept. 24th, 1913.

GREAT BRITAIN AND OLYMPIC GAMES.

To the Editor of THE LANCET.

SIR,—The opening subscription list published by the Olympic Games Fund scarcely shows symptoms of that enthusiasm which will be necessary if the total of the fund is to be carried to £100,000 or any such sum. We who sympathise with the promoters of the scheme if, as we are inclined to conjecture, they are conscious that it has not as yet exhibited signs of having "caught on" with the British public, or won approval from many whose support would have been of considerable assistance to it, have our sympathy prompted by the knowledge that those responsible for the scheme are earnestly, if too readily, convinced of the benefit likely to accrue to their country from its adoption. The aim they seek to promote appears to be a general improvement in the physical training and physical health of their countrymen in addition to the winning of prizes at the "Olympic Games" promised at Berlin in 1916, and as a result of a widespread effort to qualify athletes for that competition. The fact that the Olympic Games Fund may perhaps not develop at once into a permanent institution upon the scale desired for it by its well-wishers cannot strike medical men as an indication of the decay of physical and moral energy as exhibited hitherto in this country, or as anything in the nature of a national misfortune. From a medical point of view all medical men are in sympathy with reasonable indulgence in sport.

Athletic and field sports alike are traceable to a common origin—the preservation of the human species. The necessity for providing the necessaries of life by securing food taught men to pursue wild birds and beasts successfully and to snare fish with skill, and the preservation of life was again the object aimed at in cultivating the body generally and in training it for personal combat. The long-distance runner and the famous swimmer or jumper of to-day would, no doubt, have been utilised by our distant ancestors as a messenger useful in times of war. Modern sport, as medical men are prepared to commend it, is rightly and wisely indulged in as a recreation after toil, and as a means to maintain and increase bodily vigour. It is by some followed as a substitute for any other occupation of a more serious character to the exclusion of all other pursuits, and as such we do not commend it or admire its devotees. By others it is followed as a profession, and the ranks of these professionals are recruited by fine specimens of our race, many of them with a mental endowment which balances their physical skill. Nevertheless, nobody wishes to see the ranks of professional game-players unduly enlarged, while the cloak of patriotism must not be used to conceal the creation of a class who, without being professional athletes, none the less make athletics the affair of their lives. When Englishmen devoted themselves *con amore* to field sports we developed qualities of pluck, resource, self-control, and good fellowship, so that we were a nation which, whatever its faults, was one of conspicuously healthy bodied and healthy minded men. But many thoughtful people do not approve of turning these sports into a business. Mr. Nowell Smith, the head-master of Sherborne, reminded us, in one of his letters to the *Times*, that we are accustomed to hear schoolmasters blamed for the undue athleticism of our public schools. We are now apparently asked for the good of the nation at large to extend that athleticism, to systematise and to standardise it, not merely in order that a larger number of young athletes may meet in friendly rivalry at home, but in order that they may, by years of training, of elimination, and of selection, outdistance all competitors in a European meeting, and the pursuit of this ultimate end of international competition appears to be essential to the scheme under discussion. But it is the excess of competition in athletics and the proclaiming of success in such competition as the principal aim for which athletic prowess is to be cultivated which many of us condemn.—I am, Sir, yours faithfully,

Sept. 18th, 1913. E. A. A.

*** Apparently the nation is committed to the international contest. We quote Polonius with apologies—"Beware of entrance to a quarrel, but, being in, bear't that th' opposed may beware of thee." The first maxim having been disregarded, an attempt is now being made, wisely or unwisely, to follow the second.—ED. L.

THE NATIONAL INSURANCE ACT.

THE NATIONAL CONFERENCE OF FRIENDLY SOCIETIES AND THE ACT.

THE National Conference of Friendly Societies opened at the Hearts of Oak Delegate Hall, Euston-road, London, N.W., on Thursday, Sept. 18th, when Councillor A. H. Warren, Independent Order of Oddfellows (Manchester Unity), presided over delegates from all parts of the country and representing over 7,000,000 members.

The proceedings have been fully reported in the *Daily Telegraph*, and we comment upon them in a leading article this week. The presidential address was a dignified setting out of the position of Friendly Societies as character-building organisations, but foreshadowed the debate that followed by the suggestion that malingering and excessive sickness claims were associated with the severance of the old position between the medical profession and the Friendly Societies of employed and employer.

The following resolution was moved by Brother T. Berrie :—

That in view of the excessive expenditure on medical benefit and the inadequate and unsatisfactory service obtained therefor, and the danger involved to the State Insurance funds, on account of the present arrangements, steps be taken to secure the transference to Approved Societies of the administration of medical benefits under the National Insurance Act.

This was seconded by Brother King, who said, according to the *Daily Telegraph*, that "they got far better service when the societies had the management of the medical benefit. It ought never to have been taken away from the societies. It gave them a command over the doctors. They could say to them that if they did not do their work they would give them the 'sack,' but they could not do that at present, although that was what was required in many cases."

The resolution was later modified by Mr. Berrie in the following way :—

That action be continued to secure the transference to Approved Societies of the administration of medical benefits under the National Insurance Act where desired.

An amendment was then moved and withdrawn advocating a State Medical Service, and after several modifications another amendment was moved running as follows :—

That this National Conference is of opinion that a full-time salaried medical service is the only solution of the difficulty of providing an adequate medical service.

This amendment was rejected by a large majority, and Mr. Berrie's motion, with the omission of the last words, "where desired," became the unanimous resolution of the Conference.

A PROPOSED SPECIAL COMMISSION.

Sir Charles Macara, President of the Employers' Parliamentary Association and member of the Government Industrial Council, recently suggested in a letter to the press that the questions arising under the National Insurance Act are too numerous and too complex to be dealt with as the exigencies of party politics might suggest, and that a thoroughly representative Special Commission should be appointed to consider the question as a whole. "I claim," he says in his communication to THE LANCET, which is substantially the same as has already appeared in the lay press, "that it is high time the scheme was lifted out of the political cockpit and dealt with as a non-party and national question." The proposal of a Special Commission is virtually a severe criticism of the amending Act. As all our readers know, under the Amending Act the medical position is strengthened in minor ways, but the particular modifications of the measure which we should most desire to see are not included, and while the amendments bring into the sphere of medical benefit some 8000 or more persons they do not propose to remedy the faults in the administration of that benefit. The contention of the Government would probably be that if the amending measure had not made all persons satisfied with all situations arising under the Act, it is at any rate an earnest of their intention to deal with defects as they arise and as their reality can be proved. It is a matter of common knowledge that further amendments and changes in the National Insurance Act will have to take place, and Sir Charles Macara considers that a Special Commission, if properly representative of the interests involved, could fully consider the facts and make regular and comprehensive proposals for the removal of abuses in a manner which Parliamentary methods could not compete with either in rapidity or in directness. The proposal will, of course, be recognised as a repetition, rather late in the day, of what was said so often and so clearly by thoughtful people when the Bill was first introduced into Parliament, that deliberate business-like revision of the measure was required before the Act was placed on the statute book.

MALINGERING: THE POSITION OF APPROVED SOCIETIES.

The official inquiry into malingering will necessarily extend over some time, but some of the Approved Societies are feeling the strain on their resources so acutely that permission has been given to them to employ the services of medical referees. This can be done either directly or through the Local Insurance Committee, at the expense of the society, but the Commissioners advise that all such arrangements should be of a provisional nature. At the National Conference of Friendly Societies the motion urging upon the Government the necessity of appointing full-time medical referees in connexion with all insurance questions was withdrawn.

THE WORKING OF THE ACT IN MANCHESTER.

The Manchester Medical Committee has issued its report, signed by Dr. John D'Ewart, the honorary treasurer, on the work done in Manchester under the National Insurance Act for the quarter ending June 30th. The following are some of the details. The number of patients increased, with fluctuation, from 24,733 in January to the following numbers for the later months respectively: February, 40,788; March, 40,230; April, 40,838; May, 35,929; June, 38,028.

Comment is made on the astounding feature of these figures, which is unquestionably the amount of sickness disclosed by the working of the new Act. "Even," says the report, "when no attention is paid to the thousands of insured persons still consulting doctors not on the list, the fact that every month about one-sixth of the insured population of Manchester require medical attention is by itself sufficient to dispose of the unfair and untrue statements made recently in the House of Commons by Mr. Masterman when he charged the Lancashire doctors—because the sickness rate exceeded his estimate—with a deliberate attempt to smash the Act." The Government was repeatedly warned that the calculation of the incidence of sickness among insured persons was being made upon an unsound basis, and Mr. Masterman's allegation is consequently considered to be unfair.

In the contrast between the panel system and the Manchester scheme the Manchester Medical Committee states that the Manchester scheme was the more equitable, inasmuch as the bulk of the money available went where the bulk of the work was done. This, says the report, has been investigated actuarily, with the result as shown below :—

	February.	March.	April.	Total.
Total number of doctors ...	278 ...	277 ...	257 ...	—
Number of doctors whose credit rates exceed £87 10*s.* for month ...	48 ...	50 ...	49 ...	—
Collective credit rate of these doctors	£5,898 ...	£6,738 ...	£6,514 ...	£19,032
Collective credit rate of all others	£6,542 ...	£6,576 ...	£6,455 ...	£19,693

In other words, about 50 practitioners working in the congested areas take about half the money. The total amount of the bills rendered from Jan. 15th to March 31st was £34,413 8*s.*, and the amount paid at the rate of 13*s.* 4*d.* in the £ was £20,929. From April 1st to June 30th the bills rendered reached £40,599 14*s.* 6*d*, and the amount paid at the rate of 10*s.* in the £ was £18,782 10*s.*

The Committee draw attention to the marked tendency for insured persons to increase their demands for non-routine visitation, as evidenced by the steady rise in the relation of ordinary visits to special and night visits, the remedy suggested for which is to insist upon a small fee being sent with the request for such attendance. A strong and interesting report closes as follows: "The work done per patient per month averages about 7*s.*; the money provided by Mr. Lloyd George averages about 4*s.* As the number of patients cannot be reduced practitioners are still faced with the alternatives of reducing the work done or definitely accepting the rôle of 'philanthropists by order of the Government.'"

DIVISION OF OPINION AT WANDSWORTH.

We have received from Mr. George D. Wilson and Dr. H. McD. Parrott, respectively chairman and secretary of the Wandsworth Division of the British Medical Association, a copy of the following resolution which was passed at a meeting of the Division held on Sept. 23rd, with a request for its publication :—

This meeting of the Wandsworth Division of the British Medical Association is of opinion that the present pro-panel attitude of the Association is reacting detrimentally to the interests of members of the profession in general, and in particular to the interests of non-panel practitioners, and approves the action of all such members in resigning from the Association.

The resolution was proposed by Dr. Edwin Smith and seconded by Dr. W. E. Barton, and was carried by 21 votes to 14, thus illustrating the deep difference of opinion that still prevails in the medical profession as to the National Insurance Act.

REGULATIONS FOR THE APPLICATION OF MONEY MADE AVAILABLE FOR RESEARCH UNDER THE ACT.

The regulations have now been published in the *London Gazette*, made by the Joint Committee established under the National Insurance Act, as to the application of moneys made available for the purposes of research by Subsection (2) of Section 16 of the Act.

The regulations, which are provisional, propose to secure that all the sums which accrue under the above-mentioned subsection of the Act to the Joint Committee of the several bodies of the Commissioners or to any of the several bodies for the purposes of research shall be paid into a Medical Research Fund, and may be used as the Joint Committee may direct during the financial year in which they are provided. The following committee, known as the Medical Research Committee, has been appointed : Lord Moulton, F.R.S. (chairman), Dr. Christopher Addison, M.P., Mr. Waldorf Astor, M.P., Sir T. Clifford Allbutt, F.R.S., Mr. C. J. Bond, Dr. W. Bulloch, F.R.S., Dr. Matthew Hay, Dr. F. Gowland Hopkins, F.R.S., and Sir William Leishman, F.R.S. They will hold office for three years, and thereafter three members will retire every two years, selected as the committee chooses, and being eligible for re-election. Casual vacancies are to be filled by the chairman. The names have already been published in THE LANCET, as have those of the Advisory Council for Research which has been constituted as follows: the Right Hon. Lord Moulton (chairman), Miss L. B. Aldrich-Blake, M.D., M.S., Sir W. Watson Cheyne, F.R.S., Sir William S. Church, Dr. Sidney Coupland, Mr. David Davies, M.P., Dr. Sheridan Delépine, Sir James Kingston Fowler, Sir Rickman J. Godlee, Sir Alfred Pearce Gould, Dr. David Hepburn, Mr. E. C. Hort, Dr. Arthur Latham, Sir John McFadyean, Dr. W. Leslie Mackenzie, Dr. J. C. McVail, Dr. W. J. Maguire, Dr. S. H. C. Martin, F.R.S., Dr. Robert Muir, Dr. Alexander Napier, Sir George Newman, Dr. Arthur Newsholme, Dr. J. M. O'Connor, Sir William Osler, F.R.S., Dr. A. C. O'Sullivan, Dr. Marcus S. Paterson, Sir Robert W. Philip, Sir William H. Power, F.R.S., Dr. H. Meredith Richards, Dr. Lauriston E. Shaw, Mr. Albert Smith, M.P., Dr. J. Lorrain Smith, F.R.S., Mr. T. J. Stafford, Dr. T. H. C. Stevenson, Mr. Harold J. Stiles, Sir Stewart Stockman, Dr. W. St. Clair Symmers, Miss Jane Walker, M.D., Dr. Norman Walker, Mr. J. Smith Whitaker, Sir Arthur Whitelegge, and Dr. G. Sims Woodhead.

The Medical Research Committee will appoint a treasurer or such officers as are necessary, and expend sums at its discretion for administrative purposes subject to the approval of the chairman of the Joint Committee ; and will also prepare schemes for research or inquiry containing estimates of expenditure for submission to the chairman of the Joint Committee for his approval, this approval to be given after consultation with the Advisory Council. The following payments are to be arranged for :—

(*a*) To members of the Advisory Council for Research travelling expenses and subsistence allowances, upon a scale to be approved by the chairman of the Joint Committee, incurred by them in attending meetings of the Council ; (*b*) such sums as the chairman of the Joint Committee may direct, as honoraria to members of the Medical Research Committee, not being the chairman of the committee or members of the Commons House of Parliament ; (*c*) to the Medical Research Committee such sums as may be required for the administrative purposes of the committee ; (*d*) such sums as the chairman of the Joint Committee may from time to time direct to be paid to the Medical Research Committee for the purposes of any scheme or schemes approved as aforesaid.

The accounts of the Medical Research Fund are to be made up for each financial year, ending March 31st, audited as the Treasury may direct, and any moneys standing to the credit of the Fund and not immediately required are to be invested as investments for Approved Societies in accordance with Subsection (2) of Section 56 of the Act. No moneys are to be paid as salary or fee to any members of the Medical Research Committee or of the Advisory Council for Research, save as expressly provided in the Regulations, which are the formal enactment of much that has already been published.

Medical News.

MADAME SARAH BERNHARDT AND THE HOSPITALS.—Madame Sarah Bernhardt's generous activities on behalf of the suffering and the sorrowing are well known, and it seems certain that the French Hospital in London and Charing Cross Hospital, to both of which hospitals she has already been a generous contributor, will profit greatly by the charity performance to be given by her at the London Coliseum on Oct. 11th. Their Majesties the King and Queen have promised to attend. The lowest prices will be 5*s.* for gallery seats, the remaining seats varying in price from 1 to 10 guineas and 100 guineas for boxes. There is a natural and special ground for sympathy between Madame Bernhardt and the French Hospital, while the pathetic announcement of "five closed wards" at the Charing Cross Hospital, which has always rendered particular service to the distressed members of the theatrical profession, renders it a peculiarly fitting object for the generous artistic services of the greatest living actress.

PRIZES AT THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.—In addition to the awards already announced in THE LANCET of August 16th, Messrs. M. Schaerer, of Bern and Berners-street, London, manufacturers of complete hospital equipment, have been given the grand prix for their exhibit, as have also Messrs. Charles Hearson and Co., of Regent-street, London, for their incubators and specialities. The proprietors of Vittel medicinal table water (agent, E. Del Mar, Mark-lane, London) have been awarded a gold medal.

UNIVERSITY OF BIRMINGHAM.—At the opening of the winter session at the University of Birmingham on Oct. 7th a reception will be held in the Medical Faculty buildings at 7.30 P.M., after which Professor Arthur Keith, LL.D., Conservator of the Royal College of Surgeons' Museum, will deliver an address on "The Present Problems Relating to the Antiquity of Man."

NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED.—A conference of public authorities in connexion with this association is announced to take place at the Guildhall on Oct. 23rd, under the presidency of the Lord Mayor.

MEDICAL MAGISTRATES.—Dr. H. J. Clarke and Dr. A. C. Wilson have been recently placed on the commission of the peace for the borough of Doncaster.

BOOKS, ETC., RECEIVED.

CHURCHILL, J. AND A., London.

A Manual of Surgery. For Students and Practitioners. By Francis T. Stewart, M.D., Professor of Clinical Surgery, Jefferson Medical College. Third edition. Price 16*s.* net.

Cancer of the Rectum, its Surgical Treatment. With an Appendix of 445 Cases. Jacksonian Prize Essay. Sixth edition. By Harrison Cripps, F.R.C.S., Consulting Surgeon to St. Bartholomew's Hospital. Price 5*s.* net.

On Diseases of the Rectum and Anus. Including the Sixth Edition of the Jacksonian Prize Essay on Cancer. Fourth edition. By Harrison Cripps, F.R.C.S., Consulting Surgeon, St. Bartholomew's Hospital. Price 10*s.* 6*d.* net.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XXXIII. Session 1913. With List of Officers, Members, &c. Price 12*s.* 6*d.* net.

Saint Thomas's Hospital Reports. New Series. Edited by Dr. J. J. Perkins and Mr. C. A. Ballance. Vol. XL. 1911. Price 8*s.* 6*d.* net.

GILL, L. UPCOTT, AND SON, LIMITED, Bazaar Buildings, Drury-lane, London, W.C.

Portuguese Political Prisoners. A British National Protest. Fifth and enlarged edition. Price 6*d.*

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ARNOLD, J. I., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Junior House Surgeon at the Salford Royal Hospital.

BUTLER, T. HARRISON, M.D., B.Ch. Oxon., has been appointed Assistant Surgeon to the Birmingham and Midland Eye Hospital.

DICKSON, WILLIAM ARNETT, M.D. St. And., F.R.C.S. Edin., D.P.H., has been appointed County Tuberculosis Medical Officer to the Joint Committee of the Gloucestershire County Council and Gloucester City Council.

HEATON, G., M.B., Ch.B. Oxon., F.R.C.S. Eng., has been appointed Consulting General Surgeon to the Birmingham and Midland Eye Hospital.

HIRD, R. BEATSON, M.D., B.Ch. Birm., F.R.C.S. Edin., has been appointed Assistant Surgeon to the Birmingham and Midland Eye Hospital.

JOHNSTON, M. J., M.B., Ch.B. Edin., has been appointed Tuberculosis Officer for West Sussex.

JONES, J. P., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Barmouth District of the county of Merioneth.

LAWRY, RICHARD COGER, L.R.C.P. Lond., M.R.C.S., has been re-appointed School Medical Officer by the Penzance Education Committee.

MCCOLL, EVA, M.D. Glasg., D.P.H. Camb., has been appointed School Medical Officer of Jarrow.

PEAKE, H. G., M.B., Ch.B. Vict., has been appointed House Physician at the Salford Royal Hospital.

PITT, OSWALD, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Salford Royal Hospital.

SMITH, D. PRIESTLEY, M.B., B.Ch. Birm., has been appointed Assistant Surgeon to the Birmingham and Midland Eye Hospital.

TODD, ALAN H., M.B., B.S., B.Sc. Lond., F.R.C.S. Eng., has been appointed Surgical Registrar and Tutor and Staff Anæsthetist at Guy's Hospital.

WALKER, T., M.B., Ch.B.Q.U. Belf., has been appointed Casualty House Surgeon at the Salford Royal Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARGYLE AND BUTE ASYLUM, Lochgilphead.—Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, and laundry.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and lodging.

AYR COUNTY HOSPITAL.—Resident House Surgeon. Salary £70 per annum, with board and residence.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—Senior and Junior House Surgeon, unmarried. Salary £100 per annum each, with board, residence, and washing.

BATH, ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Physician.

BETHLEM HOSPITAL.—Resident House Physician, unmarried, for six months. Salary at rate of £25 per quarter, with apartments, board, and washing.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary £75 per annum, with board, residence, and laundry.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, and laundry.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with apartments, board, and laundry.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-resident House Surgeon for six months. Salary at rate of £100 per annum.

BRISTOL ROYAL INFIRMARY.—Three House Surgeons and One House Physician. Salaries at rate of £100 per annum. Also Throat, Nose, and Ear House Surgeon. Salary at rate of £75 per annum. All with apartments, board, and laundry, and for six months. Also Dental House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and washing.

CANTERBURY MENTAL HOSPITAL, Canterbury.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, washing, and attendance.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd-street, St. Pancras, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £150 per annum, with board, &c.

CUMBERLAND COUNTY COUNCIL.—Assistant to County Medical Officer of Health. Salary £250 per annum.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, attendance, &c.

DUNDEE ROYAL INFIRMARY.—Anæsthetist and Instructor in Anæsthetics in University of St. Andrews. Salary £200 per annum.

DURHAM COUNTY ASYLUM.—Third and Fourth Assistant Medical Officers, unmarried. Salary £200 per annum, with board, lodging, and washing.

EASTERN DISPENSARY, Leman-street, E.—Resident Medical Officer. Salary £120 per annum, with residence and attendance.

EXMINSTER, DEVON COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with quarters, board, and laundry.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's-buildings, Holborn Circus, E.C.—Honorary Physician.

GARTLOCH MENTAL HOSPITAL, Gartcosh, near Glasgow.—Directorship of the Scottish Western Asylums' Research Institute.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant Physician.

HALIFAX ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £70 per annum, with residence, board, and washing.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident Medical Officer, unmarried. Salary £200 per annum, with board and residence. Also House Physician. Salary for six months 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board, residence, &c.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with board and apartments. Also Casualty House Surgeon for six months. Salary at rate of £80 per annum, with board and lodging.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, &c.

KING'S COLLEGE HOSPITAL.—Resident Assistant Clinical Pathologist. Salary £60 per annum, with board and lodging.

LEICESTER POOR-LAW INFIRMARY.—First Resident Assistant Medical Officer. Salary £200 per annum, with rations, apartments, and washing. Also Second Resident Assistant Medical Officer. Salary £150 per annum, with rations, apartments, and washing.

LIVERPOOL, CITY OF.—Assistant Tuberculosis Officer. Salary at rate of £400 per annum.

LIVERPOOL ROYAL INFIRMARY.—House Surgeon, and House Surgeon to Gynæcologist's Department, for six months.

LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar and Medical Registrar. Salary in each case £100 per annum. Also Assistant Anæsthetist.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £100 and £80 per annum respectively, with board and residence.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER WORKHOUSE, Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, attendance, &c. Also Second Assistant Medical Officer, unmarried. Salary £135 per annum, with rations, apartments, washing, attendance, &c.

MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, 26, Margaret-street, Cavendish-square, W.—Honorary Laryngologist.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at rate of £120 per annum, with board, residence, and laundry.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—Assistant House Surgeon. Salary at rate of £100 per annum for first six months and £110 per annum afterwards, with board, apartments, washing, and attendance.

MIDDLESEX COUNTY ASYLUM, Wandsworth, S.W.—Third Assistant Medical Officer. Salary £200 per annum, with board, lodging, &c.

NEWARK-UPON-TRENT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

NEWCASTLE-UPON-TYNE, HOSPITAL FOR SICK CHILDREN.—Senior Medical Officer and Junior Medical Officer. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

NORTHAMPTONSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100 per annum, with board, residence, and laundry.

NOTTINGHAM WORKHOUSE AND INFIRMARY.—Resident Assistant Medical Officer, unmarried, for six months. Salary at rate of £165 per annum, with apartments, board, attendance, and washing.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and Surgeon for six months. Salary at rate of £52 10s. per annum in each case, with board and residence.

PERTH, JAMES MURRAY'S ROYAL ASYLUM FOR LUNATICS.—Physician-Superintendent. Salary £700 per annum, with furnished house, &c.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

PRESTON, COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Assistant Ophthalmic Surgeon. Also Senior House Physician and Senior House Surgeon. Salary £75 each per annum. Junior House Physician, Assistant Pathologist, and Junior House Surgeon. Salary £60 each per annum, with residence, board, and laundry. All for six months.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Clinical Assistants in Out-patient Department for Medical, Surgical, and Eye cases.

READING, ROYAL BERKSHIRE HOSPITAL.—House Surgeon and Second House Surgeon for six months. Salary in each cash £80 per annum, with apartments, board, and washing. Also Honorary Assistant Surgeon.

ROCHDALE INFIRMARY.—Second House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROYAL ARMY MEDICAL CORPS.—Twelve Commissions.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary £100 per annum, with board and residence.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Junior Resident Medical Officer, unmarried, for seven months. Salary at rate of £70 per annum, with residence, board, and laundry.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer for six months. Salary at rate of £100 per annum, with board and residence.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and residence.

SCALEBOR PARK ASYLUM, Burley-in-Wharfedale.—Assistant Medical Officer. Salary £180 per annum, with board, apartments, attendance, &c.

SEAMEN'S HOSPITAL SOCIETY.—DREADNOUGHT HOSPITAL, Greenwich: Two House Physicians and Two House Surgeons. Salary £50 per annum each, with board, residence, and washing. ALBERT DOCK HOSPITAL, Connaught-road, E.: House Surgeon; also House Surgeon to Out-patients. Salary £75 per annum each, with board, residence, and washing. All for six months.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, rations, &c.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £90 per annum, with board and apartments.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary at rate of £100 per annum, with rooms, board, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £180 per annum, with apartments, board, washing, attendance, &c.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, &c.

WAKEFIELD GENERAL HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon for six months. Salary at rate of £120 per annum, with apartments, maintenance, and laundry.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer. Salary £200 per annum, with board, apartments, attendance, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Surgeon. Salary at rate of £75 per annum.

WEST HAM BOROUGH ASYLUM, Goodmayes, Ilford.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, washing, and attendance.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary at rate of £120 per annum, with board and lodging.

YORK DISPENSARY AND MATERNITY HOSPITAL.—Resident Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Acts at Ballyward, in the county of Down.

Births, Marriages, and Deaths.

MARRIAGES.

DEPREE—WILLEY.—On Sept. 16th, at the Cathedral, Exeter, Hubert Templer Depree, M.B., B.C. Cantab., to Lilian May, eldest daughter of the late H. A. and Mrs. Willey, Pennsylvania Park, Exeter.

FOSTER—SEABROOK.—On Sept 16th, at Brockworth Church, Gloucester, Dr. John J Foster, of Churchdown, to Violet Maud, eldest daughter of Rev. J. H. and Mrs. Seabrook, of Brockworth Vicarage, Gloucester.

WRAITH—GREENWAY.—On Sept. 24th, at St. Mark's, N.W., Oswald S. Wraith, M.D. Durh., F.R.C.S.E., of Gwy-Nant, Hereford youngest son of the late S. H. Wraith, F.R.C.S., of Darwen, to Gertrude E. Greenway, of Horsell, Surrey, youngest daughter of the late Rev. Charles Greenway, of Darwen.

DEATHS.

FORBES-ROSS.—On Sept. 13th, at a nursing home, Frederick William Forbes-Ross, M.D., F.R.C.S., eldest son of the late Sir David Palmer Ross, C.M.G., aged 45 years.

HUTTON.—At Harrow-on-the-Hill, suddenly, of heart failure, David Mount Hutton, M.D., of Birkdale, Lancashire, in his 44th year.

WILSON.—On Sept. 23rd, at The Corner House, Southwold, Francis Kenneth Wilson, M.B., B.S. Lond., aged 43 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL NOTES FROM HISTORICAL MANUSCRIPTS.

THE latest volume issued by the Historical Manuscripts Commission includes a report on certain letters and papers of the seventeenth and early eighteenth centuries (now in the possession of Mr. M. L. S. Clements, of Cootehill, co. Cavan) written by or to the first three Viscounts Molesworth, who owned estates in Yorkshire, in co. Dublin, and in King's County. The first Viscount, Robert Molesworth, was for many years Ambassador to Denmark; the second, John, was engaged in several diplomatic missions; and the third, Richard, was a soldier who served under Marlborough at Ramillies and was afterwards Commander-in-Chief in Ireland. It is not surprising, therefore, to find many of the letters dated from abroad. The first and second viscounts, as well as several other members of the family, suffered much from ill-health, and consequently there are to be found in their correspondence many references to medical topics; and such allusions, though of no present medical value, are well worthy of preservation on account of the authentic sidelights they throw on the views and practices prevailing at the period, especially in domestic circles, concerning various diseases and their appropriate treatment. It is not unfrequently the case that such intimate communications, written spontaneously at the time of the happenings recorded and never intended for the public eye, reveal a truer representation of the matters referred to than can be found in official reports or State despatches. The subjoined extracts may therefore interest, and perhaps in some instances amuse, the modern reader.

Robert Molesworth to his Wife, London, Oct. 29th, 1696.—"I must confess this town has been an unfortunate one to us in the burying of our children, and I think the Irish doctors better than the English ones for them in case of sickness."

From the Same to the Same, Breckdenston (Ireland), June 7th, 1704.—"I am extremely concerned to find that your giddiness continues so violent. For God's sake have courage enough to suffer yourself to be blooded for fear of an apoplexy or lethargy, of which giddiness is the ordinary forerunner; or in case it proceeds from a foul stomach you must take vomits."

From the Same to the Same, Edlington (Yorkshire), June 17th, 1704.—"Mrs. Woodyear's receipt for the green sickness is 'no more than a handful or 2 of very rusty iron steeped in 3 or 4 quarts of ale or beer for 2 or 3 days, and half a pint of the liquor must be drunk every morning, and at evening as much.'"

From the Same to the Same, Bath, June 1st, 1706.—"The waters pass better with me than they did. I begin to think really that I shall get the better of this sickness. I find by experience that drinking the waters too hot at the pump does me harm, whereas when I drink them in my chamber, though very warm, they do not affect my lungs."

The Same to the Same, Edlington, June 11th, 1707.—"On Monday I began to use my own cold bath. All I can tell you is that it has done me no hurt. I have been in but once, for methought it was very cold. I know not how often I shall bring myself to bear it."

The Same to the Same, April 19th, 1709.—"Cloky [his daughter] is brave and well. This day she takes her first physic. Yesterday we blooded her to take off her cough and defluxion."

The Same to the Same, Edlington, Nov. 2nd, 1709.—"I am concerned to hear that your breast bleeds again. Since you are [in Dublin] where you may have Proby's advice constantly, whom I look upon as one of the best surgeons in the world for that distemper, I hope you will not omit consulting him often."

A document in Italian headed "An Effectual Remedy against Hypochondriacal Complaints," Venice, March 3rd, 1710.—"Take some of the *ciacoli* [barnacles?] grey in colour with yellow markings, which are to be found attached to the piles that serve as foundations for the houses in Venice; bruise them in a white marble mortar, mix in two spoonfuls of juice of bitter Portuguese oranges, and ten ounces of white candied sugar, and one ounce of flour of sulphur. Cook on a gentle fire for half an hour, divide into 12 boluses, one to be taken every morning, pouring over it four ounces of mutton broth. Rules to be observed by the patient while taking this remedy: Avoid all meats difficult of digestion, as beef, salt meat, pork, dried fish, veal soup or veal cooked in milk, which is too laxative; refrain also from all kinds of vegetables and greens, except turnips and cauliflowers, and from cheese and things made from milk (*latticini*). Avoid late hours and do not exceed six ounces of food at supper. For ordinary diet take fowl, capons, mutton, chiefly boiled or in broth with barley, eggs underdone without vinegar and with little salt, sea fish which are not too heavy on the stomach, as oysters, sea or fresh-water crabs, lobsters, and all kinds of shellfish. Tea and coffee are unsuitable. Chocolate may be taken, but in moderation. For drinking have *Muscatello di Saragossa ò di Cefolonia* or other generous and balsamic wines, taking three or four glasses at most at each meal without water. It is hoped that with the help of God and the observation of these rules a cure will be effected within three weeks. The

patient should not study or write or apply his mind in any manner. He should divert himself with balls, music, and cheerful conversation."—*Endorsed*, "*Per l'illustrissimo Signore Ruberto Brudenell.*"

Robert Molesworth to his Wife, London, Feb. 23rd, 1711-12.—"If the Bath waters be judged proper for you, I wish you would rather choose to drink them upon the place than where all the virtue is spent. I know that at the Bath the physicians say they lose most of their virtue between the spring-head and one's lodging there, and therefore do advise their patients to go to the spring and drink them hot. I would have you, before you undertake anything, to call a consultation of 2 or 3 of the most eminent physicians you have in that kingdom [Ireland] and state your case and take their opinion; 2 or 3 guineas is well laid out this way before you undertake a journey of fatigue and expense. ..... The season begins in May, and one may have a coach straight to the Bath from Chester."

The Same to the Same, London, April 28th, 1713.—"By your description your distemper must be the gout, which, being driven out of your legs, mounts into your side and stomach, from which last place you must drive it by drinking pretty frequently a large glass of strong wine."

The Same to the Same, May 30th, 1713.—"In case Watt should be in a consumption I know no place in the world so proper for him as Montpellier, and if he were with us at home we should wish him there; for there are admirable physicians, excellent air and diet, asses' milk in abundance, everything cheap, and cheerful company."

The Same to the Same, Edlington, Sept. 23rd, 1713.—"Pray do not let the midwives, when Cloky cries out, precipitate too much nature's work. Let nature have time to operate; she is a kind mother, and we often spoil her work by being over hasty. Lord keep us from physicians and midwives."

The Same to the Same, Edlington, March 22nd, 1713-14.—"I am extremely concerned at the return of your flux. I do verily believe there is something either in the air or in the malt drink there [in Ireland] which is not agreeable to either of us now that we are used to English diet, for I protest I found a sensible difference for the better as soon as ever I trod upon Welsh ground, and so all along the road, my appetite being twice as good as it used to be in Dublin."

John Molesworth to his Mother, Lady Molesworth, Liége, Oct. 3rd, 1719.—"The course I was in at the spa admitted of no great variety. I drank every morning to the quantity of three flasks of water, was up every day by 4 or 5, and went to bed supperless every night about 9, was forbid reading, writing, sleeping in the daytime, or so much as playing at any game that required application, and the exact observance of this scheme makes up a full account of six weeks' stay at that village. All the advantage I could perceive from so great a regularity and fatigue was a great appetite towards 11 o'clock and that I was very drowsy towards bedtime; but since I came hither and drank the water in lesser quantity, eat two meals a day, and lie longer in the morning (which way of living is a sort of repose in comparison with the former) I can scarce believe I was lately so weak as I remember myself at Epsom. I don't doubt but by degrees I may recover my strength, especially if it were practicable to follow the advice of Mr. Boorhaven, which is to continue on with these waters as I now use them for a month or six weeks longer and even at proper intervals all the winter."

Viscount (Robert) Molesworth to his Son, Hon. John Molesworth, Breckdenston, June 30th, 1720.—"I cannot forbear acquainting you with an accident which has befallen our good friend and kinsman, my Lord Chief Justice Forster. Sitting upon the bench in his Common Pleas Court on Monday morning he was most suddenly taken with a paralytic fit which instantly took away his speech and his limbs on his right side, and he now lies in a desperate condition. I do not think it is possible for him to recover, though they tell me he begins this day to speak a word or two and to feel something in his right side or limbs. He has had all the applications physicians could think of, bleeding plenteously, vomits, clysters, blistering plasters (4 or 5) and I know not what else. I happened to be present when this fit seized him, which I took to be apoplectic, and it was indeed accompanied with a very lethargic fit. I caused him to be immediately blooded by the first scrub barber that was to be met with, which I think kept him alive, though, I doubt, to little purpose."

Viscount Molesworth to Lady Molesworth (London?), March 23rd, 1720-1.—"Pray send me word how Dublin is now provided with good surgeons in case one should have need of one there—I mean such as are skilled in the difficult operations of cutting for stone, or fistulas, or probing with catheters, which I take to be much out of the way of common surgeons, and which I think Mr. Proby was once skilled in. Here (since the death of Cyprianus and Salter) there are few or none in high renown left, and those who have need go to Paris. My old glyster [clyster?] is a most excellent one for the wind colic. I gave you the receipt of it, construed by Gascoign, the late apothecary of Sheffield, into plain English. Yesterday I made use of it with good success by way of préventive, for when my body is brimfull of wind it will not receive a glyster. Dr. Wellwood prescribes me to drink some strong white wine, with an ounce of bruised mustard seed infused in it—a glass twice a day cold."

Lord Ferrard to his Half-Brother, Viscount Molesworth, Beaulieu, June 14th, 1721.—"I would have waited upon my Lady but that I have not been able to stir by reason of great numbers of boils that came out all over my body, particularly on my hands, legs, and feet, so that I fancied myself like the picture of 'Job upon the Dunghill,' as you see it hung up in many alehouses. ..... I beg you will be so kind as to bring me two pair of the best spectacles. You know my age and therefore want no further directions."

The Same to the Same, Beaulieu, Sept. 4th, 1722.—"I hope you find yourself better of your strangury. Take care of cold, let your diet be sweetening, let your days be free from too much thought, let your exercise be moderate, and drink plentifully of soft things. Pardon my playing the adviser, I have had some experience, for about ten days ago I had a fit of the gravel and by these methods got rid of it in three days."

Viscount Molesworth to Lady Molesworth, Philipstown, May 3rd, 1724.—"I see by experience that 'tis high time for me to leave off riding long journeys. This last (though I did no more than walk a foot pace) has brought a fit of the strangury and gravel upon me and I am in a place where no herb or drug that I might have occasion for (either for clyster or oat drink) can be had nearer than Tullamore."

The Same to the Same, May 6th, 1724.—"I met here with a very able Irish physician, who came to visit Mrs. Miller, that lies very ill of some womanish distemper. I was persuaded by Mr. Preston to disburse a pistole upon him. He made me take a clyster according to my own receipt (which I carry in my pocket always) and makes me swallow about a dozen of large Chio turpentine pills every day, and this morning he bathed me in a large brewing keeve (which I found in my landlord's brewhouse) with a bundle of sweet herbs. I stayed in it a long hour. I believe I shall henceforth use baths pretty often. I felt no indisposition while I continued in it. ..... There is in this country the best ale that ever was tasted, and claret too. I have made a syllabub of it this evening. My Irish doctor would fain have given me a little laudanum, but I would not take it."

G. Malcolm to the Hon. John Molesworth, London, May 22nd, 1724.—"Your observations are very just that your distemper (or rather the relics of it) lies in the weakness of the stomach, bowels, bladder, and spleen, and that the glands of the intestines and bladder were seared and grown callous; but it is to be hoped, if not certain, that after going through such severe courses, and those appropriated to that very purpose, these callosities are removed, or at least softened so much as to make way for other remedies. Now those others was purging and diet drink in order to soften and cleanse the vessels as well as the blood, and to render the different secretions free in all parts of the body as well as the glands; the complication of your distempers would not allow of this most effectual method, as you may very well remember, and we had reason to believe that by your recruiting your strength during the winter, and the favourable spring at Pisa with the help of the Luca waters, that these dregs might a' been cleansed and washed away. By what you write I am sorry to find it is not so, and yet I am not surprised to hear you are not perfectly recovered, because it's impossible nature can help anything towards it when oppressed by so great an evacuation from the hemoroidal vessels, which is enough of itself to bring all those symptoms of indigestion, hypochondriacal ferments in the bowels and bladder, and even hydropical or jaundice; no man can be able to bear so large and frequent evacuations. So that your whole or at least the first intention must be to lessen that symptom and at the same time to endeavour the cleansing and strengthening of the other parts. I gave your letter to Doctor Wellwood and desired his opinion, and we both agree, in answer to your query, that you must avoid purging by irritation, because of the consequence of your fevers returning very thick on you; what can be done that way must be so gentle as justly to keep your belly insensibly open; the most effectual remedy is chawing of rhubarb, and that of the very best, and a small quantity, every day 4 or 5 times, about 2 grains each, shaved very thin, and to continue so for a month, and to begin immediately and every day during your drinking of those bath waters at Aix, which must be in a very small quantity, not above 2 or 3 glasses a day, with the hot bath every day or every other day as your strength and the effects will permit. The rhubarb will strengthen your stomach, help digestion, correct those grumblings in the bowels, and strengthen the hemoroidl vessels, cleanse the intestines and bladder by the help of the bath, which will foment and soften all those parts and glands which may have suffered by the astringents unseasonably used and which I am convinced, from what I have already said, want help, as well as the whole mass of blood, whose fibres are torn in pieces. This method, with the help of the asses' milk afterwards, will unite these dissolved or relaxed parts of the blood, which want sweetening and nourishment in order to render all the different secretions in their due and natural state."

THE LITERATURE OF KLEPTOMANIA.

"PAIDOLOGIST" asks for a reference to the literature of kleptomania. Most of the literature on kleptomania is in the German and French languages, but a few communications have been published in Italian, Russian, and Spanish. If our correspondent can obtain access to a copy of the *Index-Catalogue of the Surgeon-General's Library*, Series I. and II., he will find them all catalogued there under the word Kleptomania. Information will be found in "Twentieth

Century Practice of Medicine," vol. xii., p. 106, and "Psychological Medicine," by Maurice Craig, M.D., 1905, p. 341. A few English and American titles are as follows: A Case of Temporary Kleptomania, by Hugh Miller, M.D., THE LANCET, June 15th, 1878, p. 865; Stealing as a Symptom of General Paralysis, by Henry Maudsley, M.D., THE LANCET, Nov. 13th, 1875, p. 693; Annotations in THE LANCET of March 24th, 1877, p. 434, and July 11th, 1885, p. 81; Partial Moral Mania—Kleptomania, by Balfour Browne, M.D., *British and Foreign Medico-Chirurgical Review*, 1871, xlvii., pp. 498–514; Kleptomania, by J. C. Bucknill, M.D., *Journal of Mental Science*, 1862–3, viii., pp. 262–275; Kleptomania and Collectivism, by J. G. Kiernan, M.D., *Alienist and Neurologist*, St. Louis, 1902, xxiii., pp. 449–455; A Case of Kleptomania in Association with Uterine and Rectal Disease, by L. W. Steinbach, M.D., and S. S. Cohen, M.D., *Philadelphia Polyclinic*, 1897, vi., pp. 55–58; A Case of Kleptomania, by B. D. Eastman, M.D., *American Journal of Insanity*, 1878–9, xxxv., pp. 254–271.

THE DISCOVERY OF THE ALKALOIDS.

To the Editor of THE LANCET.

SIR,—In your review of "The Plant Alkaloids," by Dr. T. A. Henry, published in THE LANCET of Sept. 13th, p. 802, you quote Dr. Henry's statements with regard to the history of the alkaloids, giving the date of their isolation, and so on. In THE LANCET of Nov. 15th, 1902, p. 1332, you reprinted under the heading of "Looking Back" a concise history of the alkaloids which was taken from THE LANCET of Nov. 13th, 1824. The first in the list is "Atropine, discovered by Brandes in the Atropa belladonna." In your recent review you quote: "Strychnine was discovered by Pelletier and Caventou in 1817, atropine in 1833." You will see that THE LANCET of 1824 mentioned the discovery. In the 1824 list is also the following: "Strychnine, discovered in 1818 by MM. Pelletier and Caventou." In that list is also stated: "Morphine. Discovered in 1817, by Seturner, in opium, in the state of a meconiate." You quote: "In 1804 the isolation of morphine was described," and you add "about the same time quinine was recognised, although nearly 20 years previously an impure product was obtained." In THE LANCET of 1824 is stated: "Quinine. Discovered 1820 by MM. Pelletier and Caventou in the Cinchona." Emetine is stated in that list to have been discovered in 1817 by MM. Pelletier and Magendie, in the roots of the viola emetica, callicocca ipecacuanha, and psycotria emetica, and by M. Boullay in the violet. You now quote the year of discovery as 1816. I believe the list in THE LANCET of 1824 was a few years ago adopted by an eminent American lexicographer as a piece of historical evidence, so it would be interesting to know if it is right or wrong.

I am, Sir, yours faithfully,

Sept. 17th, 1913. ENQUIRER.

HEALTH AND PROGRESS OF WEI-HAI-WEI.

THERE has just been presented to Parliament a report by Sir J. H. Stewart Lockhart, K.C.M.G., the British Commissioner, on the affairs for 1912 of the territory of Wei-hai-wei, which, it may be recalled, was leased to Great Britain by China by a convention made in 1898. It lies in latitude 37·30° N., longitude 122·10° E., being situated in the Chinese province of Shantung. It comprises the island of Liu Kung, all the islands in the Bay of Wei-hai-wei, and a belt of land ten English miles wide along the entire coast line, with a total area of about 285 square miles and a population of about 148,000. The Commissioner, in the report alluded to, which covers many matters of considerable interest, mentions that during the past year the general health of the territory was very good, and that, as in 1911, there was no epidemic. Among Europeans there was one fatal case of typhus, which was contracted in Shanghai, and a marine on the island died from diphtheria. 3623 vaccinations were performed, of which 90 per cent. were successful. Sanitary conditions were satisfactory, and further steps are being taken to decrease the number of flies on the island of Liu Kung.

Increasing confidence of the Chinese in European methods was shown by a very marked rise in the number of patients treated in the hospital at Port Edward—viz., 4923 out-patients and 110 in-patients, making a total of 5033, as compared with 3909 in 1911. 100 operations were performed, and of these perhaps the most interesting were 10 cases of gunboat wounds, received during the fighting in Chinese territory near the frontier of Wei-hai-wei. There were 7 midwifery cases, 5 of which were difficult instrumental ones. The Chinese are still very conservative in these matters and very seldom seek assistance, and then only when the patient is *in extremis*. They, as a rule, still prefer the primitive methods of the local old women which result in a very high rate of mortality among both women and children. The total number of patients treated in the Island Hospital was 1853, of whom only 11 were in-patients.

Large numbers of out-patients were treated by Mr. Ma, medical assistant at Wên Chüan T'ang, who continues to show great zeal and interest in his work. There were 4009 new cases, with 7328 attendances, as compared with 4849 cases in eight months of 1911. The reduction in the number of patients prescribed for is accounted for by the inauguration of a new system of charging fees to cover the cost of drugs supplied. Under the old system many persons who could well afford to pay for the drugs used by them failed to do so, while now all patients have to pay cash unless they can bring a letter from their village headman or other responsible person certifying their inability to pay even the small sums demanded. It may be added that medical treatment is free to all comers, the only payment required being the cost price of the drugs supplied in the case of those who can afford to pay. The Franciscan Sisters started a free dispensary at the convent in 1908. In addition to treating patients who come to the dispensary they also attend cases of sickness in the villages. Their charitable work is much appreciated by the Chinese, of whom 21,140 have benefited since the foundation of the institution. The highest temperature in 1912 was 97° F. in July and August, and the lowest 4° F. in December. Rain or snow fell on 52 days, the rainfall for the year being 16·59 inches, the lowest on record.

An independent antifoot-binding society called the Yuan Tsu Hui (Original or Natural Foot Society) has been formed locally and is meeting with considerable success. The membership consists of over 200 heads of Chinese families, and in one village recently the feet of 56 girls were unbound. In another village an old woman of over 60 unbound her feet as an example to others. Opium-smoking in the territory, which has never been a prevalent habit among its inhabitants, is rapidly decreasing. The number of licensed opium smokers in 1912 was 36, as compared with 42 in the previous year, and the number of convictions for offences under the Ordinance was 47, as compared with 95 in 1911. Of the persons convicted 6 preferred to go to gaol rather than pay the fine imposed. They were discharged from gaol cured of the opium habit, as were also 4 or 5 other opium smokers who had been sentenced to imprisonment for other offences. This decrease in the figures connected with opium smoking in the territory is remarkable when compared with the marked increase which took place outside the territory during the disturbances incident to the revolution.

In the report for last year reference was made to the increase of drunkenness among the Chinese in connexion with the decrease of opium smoking. It has not at present become a prevalent or formidable social evil among the inhabitants of the territory, but, as opium has been prohibited, the Chinese find it difficult to dispense with all forms of stimulants, so liquor in the form of Chinese spirits tends to take its place and drunkenness is now not so rare a vice as it used to be. The Chinese in Wei-hai-wei still are, as a general rule, undoubtedly a sober race, so any exception to that rule naturally attracts greater attention than in places where drunkenness is more prevalent.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

April 26th–Nov. 5th (Ghent).—International Exhibition.
May 31st to October (London, Earl's Court).—Imperial Services Exhibition.
May–October (Leipzig).—First International Building Exhibition.
June–October (London, Crystal Palace).—Anglo-German Exhibition.
June 24th–Sept. 30th (London, 54a, Wigmore-street).—Historical Medical Museum. (Organised by Mr. Henry S. Wellcome.)
Sept. 22nd–28th (Milan).—Fourteenth International Anti-alcoholic Congress.
,, 30th–Oct. 3rd (Southampton).—Church Congress.
Oct. 1st–Nov. 1st (London, Shepherd's Bush).—National Gas Exhibition.
,, 28th–Nov. 1st (London, Royal Horticultural Hall).—Twenty-fourth Universal Cookery and Food Exhibition.

METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, Sept. 24th, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 18	29·82	N.E.	...	84	64	53	54	54	Overcast
,, 19	29·97	S.W.	...	103	68	52	53	54	Foggy
,, 20	29·85	N.W.	0·25	80	62	54	55	56	Cloudy
,, 21	30·14	W.	...	98	65	53	54	57	Cloudy
,, 22	30·16	S.W.	...	94	66	52	54	55	Fine
,, 23	30·02	S.W.	0·17	82	64	55	57	57	Raining
,, 24	29·96	S.W.	0·03	113	74	57	59	61	Fine

Medical Diary for the ensuing Week.

SOCIETIES.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Opening Address:—Dr. J. S. R. Russell: Poliomyelitis—New Features of the Affection and its Diagnosis (with lantern demonstration).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—College reopens.
TUESDAY.—4 P.M., Dr. O. Grünbaum: Clinique (Medical). 5.15 P.M., Lecture:—Mr. L. Norbury: Imperforate Conditions of the Anal Canal and Rectum and their Treatment.
WEDNESDAY.—4 P.M., Mr. M. Heath: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. E. Giles: Pessaries *v.* Operations for Displacements.
THURSDAY.—4 P.M., Mr. J. S. Joly: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. H. C. Cameron: The Feeding of Infants on the Breast.
FRIDAY.—4 P.M., Mr. A. Levy: Clinique (Eye). 5.15 P.M., Lecture:—Dr. H. C. Miller: Clinical Psychology—I. Some Modern Conceptions of the Sub-conscious.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.
THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine.
FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine 3.15 P.M., Mr. L. McGavin: Surgery.
SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——10 A.M., Col. Barry: Radiography.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Puerperal Infection. 11 A.M., Examination of Patients and Minor Operations.
TUESDAY.—10 A.M., Major Operations.
WEDNESDAY.—10 A.M., Obstetrical Lecture: Puerperal Infection (continued). 11 A.M., Examination of Patients and Minor Operations.
THURSDAY.—10 A.M., Major Operations.
FRIDAY.—10 A.M., Gynæcological Lecture: Ovarian Tumours. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

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